



U.S. Department of Energy
Office of Codes and Standards

Building Energy Codes Program

2003 State Grant Summaries

Awarded States

Arizona
California
Idaho
Iowa
Kansas
Nevada
Michigan
Minnesota
Montana
Rhode Island
South Dakota
Texas
Utah
Washington
Wisconsin

Background

Arizona is a home-rule state; therefore, codes are adopted and enforced on a local level. This requires that the implementation of energy code in Arizona carried out on the local level. (previous DOE grants to Arizona Energy Office) to expand the number of jurisdictions that adopt energy codes. This effort has seen considerable success, with the adoption of energy codes or codes which have energy provisions in 21 local municipal governments. Also there are a number of communities in the process of adopting energy codes, including the cities of Phoenix and Scottsdale. Presently the City of Tucson and Pima County have already adopted the 1998 IECC and getting ready to adopt the 2000 IECC.

Purpose

The main purpose of this project is to continue the efforts to expand the adoption of energy codes throughout Arizona and to continue the partnerships to provide training and technical assistance to the building industry. It is important to continue to support the momentum that has generated through outreach, training and technical assistance in the building industry and codes community.

Project Description

Teaching Energy Conservation (TEC). The primary goal of the AEEC/TEC program is to continue to promote and support the adoption of ASHRAE 90.2 – 1999 and IECC 2000 through code workshops and one-on-one contacts with government officials, code officials, local building industry and other stakeholders. This will include ongoing technical assistance, provide model code language and training on compliance tools with the goal of not only educating these sectors on energy codes, but also on what is needed to achieve high performance in the field.

Cost Data

Federal	\$ 83,017
State	\$ 43,286
Other	\$ 104,825
Total	\$ 231,128

Partners

Tucson Electric Power Company
Southwest Gas Corporation
City of Tucson
Civano
Arizona Builders' Alliance

Southern Association of Home Builders
City of Sierra Vista
Pima County
BOMA of Greater Tucson
Pima Community College
TRICO Electric Cooperative
D.R Wastchak. L.L.C
American Institute of Architects
Sulphur Springs Valley Electric Coop.
Touchstone Energy
Arizona Public Service

Transferability

Arizona has one of the fastest growing building markets in the U.S and the many well-known builders operating in the state can transfer lessons learned, nationwide.

Background

California has some of the most building energy standards in the nation. First instituted in 1978, The Title 24 building energy code became mandatory for all new construction in 1983 and has been regularly amended on a three-year cycle ever since. The 2000/2001 energy crisis prompted an emergency proceeding that resulted in an amendment to the Residential Building Standards with the largest ever energy impact. That update included two major structural changes to the Residential Standards as follows:

- Third Party field verification changed from an optional credit to an integral part of the package features used to determine compliance, budgets, and
- Kitchen lighting was changed to require high efficiency lighting for all general lighting.

Project Description

This project will provide training to California and Nevada's large production builders and local building departments consisting of six three-day training sessions for builders and 11 one-day training sessions for building officials. In California. The training will focus on the most recent Title 24 Building Standards adopted in the wake of the 2000/2001 energy crisis. The Nevada training will focus on the currently adopted version of the Model Energy Code. In both states the emphasis will be to focus on how to best utilize and incorporate Third Party Verification of all the Standards and improved energy efficiency lighting applications, particularly as they relate to kitchen and bathroom lighting.

Cost Data

Federal	\$200,000
Other	\$ 85,766
Total	\$285,766

Partners

Building Industry Institute
California Building Industry Association

Transferability

The California Energy Commission's web site contains most of the materials from the actual training manuals.

Background

On March 8, 2001, the Governor signed Executive Order appointing the Division of Building Safety (DBS) as the lead Agency for the development, promotion, implementation and enforcement of energy codes for commercial and residential buildings. Idaho's adoption of the IECC was signed by the Governor in March 2002 and went into effect on January 1, 2003.

DBS has provided technical assistance to all IECC and IRC adopting jurisdictions and completed 245 plan reviews for energy compliance.

Project Description

For this project, DBS proposes five tasks to assure successful code adoption in Idaho:

- Provide technical assistance and training to the inspection, construction and design industry
- Support national and regional Alliance efforts, energy code collaborative activities, attend energy code strategy planning sessions with Idaho Cities and Counties, as requested.
- Assist the Association of Idaho Cities with the 2003 Idaho Energy Conference
- Develop and perform a detailed I-code adoption and enforcement survey to make available for designers, contractors, local jurisdictions, government agencies and the general public.

Coordinate efforts with the newly appointed HVAC Board for establishing energy code related regulations for installers of heating, ventilation and air conditioning systems. Project Description

Cost Data

Federal	\$ 105,000
Other	\$ 55,000
Total	\$ 160,000

Partners

Northwest Energy Efficiency Alliance
State of Washington
State of Montana
State of Oregon

State: Iowa

Award Amount: \$66,203

Cost Share: \$22,068

Grant Period: 10/03 – 10/04

Title: Promoting Building Energy Code in Iowa

Summary

The Iowa Department of Natural Resources will utilize grant funds to both advance energy codes in the state and improve code compliance through a community based support. Specific activities include:

1. Assisting decision makers on the state and local level to evaluate the effectiveness of updating the state's energy code;
2. Helping targeted jurisdictions with energy code implementation and enforcement;
3. Providing consulting and other support to other jurisdictions that have adopted energy codes at least as strong as the 2000 IECC.

Background

The Kansas Corporation Commission's Building Energy Codes and Standards Program began in 1996 with state funds and has been substantially enhanced through DOE's Building Technologies Codes and Standards program.

The Kansas legislature recently passed HB 2131 updating the current state residential and commercial building energy statute to reference the IECC 2003. The bill has been signed by the Governor. This step, in a state seldom favorable to regulation, indicates the increased recognition that state energy policy should encourage greater end-use efficiency.

Purpose

This project will provide the building industry with notification of the revised state statute adopting the IECC 2003, and:

- Achieve actual energy performance of new commercial buildings constructed in Kansas, equal to or greater than that resulting from compliance with International Energy Conservation Code 2003 (IECC).
- Achieve actual energy performance of new residential buildings constructed in Kansas, equal to or greater than that resulting from compliance with the International Energy Conservation Code 2003.

Project Description

The KCC's energy codes program has encouraged and supported local energy code adoption and enforcement. Local code agencies rarely have resources to provide training in code interpretation and compliance and often desire training for their own staff. In communities that have not adopted an energy code, the best path is to insure engineers, architects, and other building industry members understand that complying with the code is a requirement of state statute. This project will serve that end by completing the following tasks:

- Notify appropriate industry and local government representatives (commercial and residential) of the revised statute adopting the 2003 IECC.
- Assist in updating and enforcing the revised standards.
- Provide technical training to local jurisdictions.

- Complete a code adoption case study to evaluate code adoption success.

Cost Data

Federal	\$ 150,000
State	\$ 75,017
Total	\$ 225,017

Transferability

Training Materials and methods developed will be available to other states. Several Kansas training documents are currently available at www.energycodes.gov.

Background

The State of Nevada is considered a home-rule state from a code adoption standpoint. Energy code adoption and implementation is conducted differently in Northern and Southern Nevada although an energy code can be adopted state-wide through an act of legislation. Individual jurisdictions in Southern Nevada are, or will be adopting and enforcing the commercial provisions of the 1995 Model Energy Code. Southern jurisdictions have originally adopted the commercial provision of the 1992 Model Energy Code, which referenced ASHRAE Standard 90A-1980, Energy Conservation in New Building Design, but allow voluntary implementation of the lighting standards.

Purpose

The main purpose of this project is to increase the rate of commercial and residential energy code implementation through code support to the enforcement design and building industry. The grant will promote the voluntary compliance with the ASHRAE 90.1-1999 commercial energy code and/or the 2003 International Energy Conservation Code to act as a “market pull” in regions where energy code adoption is uncertain. This grant will also promote “best practice” residential construction practice in Northern Nevada, to increase the rate of energy code compliance.

Project Description

Nevada proposes to –

- Promote adoption, enforcement and implementation of commercial energy code in Northern Nevada.
- Increase the level of enforcement and implementation of residential energy code in Northern Nevada, thereby increasing the quality and efficiency of construction.
- Promote adoption, enforcement, implementation and voluntary compliance to ASHRAE 90.1-1999 and/or the 2003 IECC and beyond in Southern Nevada.

Cost Data

Federal	\$ 81,945
Other	\$ 17,875
Total	\$109,260

Partners

Nevada Power/Sierra Pacific Power
Small Business Development Center
City of Washoe, Building and Safety

Transferability

Several of the deliverables from the project will be directly transferable to other states and/or city or county governments in the implementation of energy codes. While this grant will utilize existing training materials and tools as a basis for the commercial building enforcement, and design training, new modules will be created that will enhance the training and will be made available in electronic format. The goal of the training materials will be to promote designing beyond ASHRAE 90.1-1999 Standard for Commercial buildings. The training tools developed for the residential workshops will also be based on existing training tools and will be enhanced to better meet the needs of the audience. The construction details for building science solutions, in conjunction with the code developed text to gain acceptance under the Alternative Materials of Construction provision of the Code, will be useful to other states facing the same problems. Also, collection on the needs of the enforcement agencies for code implementation can be useful for other states and local agencies when considering the implications of adopting a new energy code. Working through the small Business Development Center will provide a different perspective on how energy codes can reduce the operating codes for a small business and will provide useful arguments to other states wishing to adopt energy codes.

State: Michigan

Award Amount: \$80,964

Cost Share: \$29,988

Grant Period: 10/03-10/04

Title: Michigan Energy Code Training

Summary

The State of Michigan will adopt a new residential energy code early in 2004. To support implementation, Michigan State University will develop curricula, implementation tools like manuals and checklists, and hold up to ten training sessions. BCAP and PNNL will provide technical oversight and assistance.

State: Minnesota

Award Amount: \$66,258

Cost Share: \$28,782

Grant Period:10/03- 10/04

Title: Energy Code Education and Upgrade

Summary:

The Minnesota energy code project contains several elements designed to provide energy code support and training to code enforcement personnel and construction professionals. Through grants from the Minnesota Department of Commerce (DOC), local building officials and builders in up to five jurisdictions will be provided with in-depth building science based workshops. Statewide, DOC will also provide 25 building officials with "scholarships" to attend the 2004 Affordable Comfort Conference to be held in Minneapolis. Other activities funded through this project include conducting three presentations to commercial structure design professionals, updating web based building code materials and updating Minnesota's commercial energy code requirements.

Background

In the fall of 2003, Montana adopted and began implementation of the 2000 International Energy Conservation Code. Montana has a history of educational efforts aimed at consumers, builders and building officials to soften the market toward adoption of current energy standards.

Purpose

The Department of Environmental Quality will assist the Montana Building Codes Division and local building code officials to transition from the 1993 MEC to the 2000 IECC. Montana will develop and implement a training program for building code officials, building contractors, subcontractors, architects and engineers on the IECC.

Montana will also provide education and assistance to the building industry and new homeowners to encourage building above the 2000 IECC and taking advantage of a new \$500 state energy conservation tax credit for above-code home construction.

Project Description

Montana will provide training to builders and subcontractors on the 2000 IECC energy efficient construction techniques. Sessions will be based on the 2000 IECC and information gathered from the builder survey. Five training sessions are planned to be completed by May 2004. Six trainings for building officials will focus on the IECC 2000 and REScheck/COMcheck compliance tools.

On-site training of builders will be conducted on 20-30 homes. Builders will be able to use infrared cameras and blower doors to see the energy consequences of various building practices.

A part of the training will be focused on taking advantage of the \$500 energy conservation tax credit. Montana is currently informing the general public about the credit at home shows and in newspapers ads. Montana will develop the training sessions with stakeholders.

Cost Data

Federal	\$ 84,000
Other	\$ 30,000
Total	\$ 114,000

Background

Since 1998, the Regional Multi-State Building Energy Codes Project ("Project") has been an on-going NEEP (Northeast Energy Efficiency Partnership) initiative funded in part by the U.S. Department of Energy through grants from the Rhode Island State Energy Office.

Purpose

The goal of this project is to assist Northeast states to achieve significant energy savings in new construction, remodeling, and renovations through up-to-date building energy codes that meet or exceed national model energy code. Key indicators in this Project progress towards these goals include:

- Increasing the awareness, knowledge and attitudes of designers, builders, contractors, building code officials and other target groups in Northeast states regarding best practices to meet or exceed minimum energy code requirements in Northeast states.
- Increasing the number of Northeast states in which the average efficiency of new buildings meets or exceeds a minimum energy code compliant building.
- Increasing the level of sustained funding for state and regional code-related activities, including grants, ratepayer-funded and industry trade-ally support.

Project Description

In 2004, the Project will continue to assist states to update national and Northeast energy code requirements, and to develop and implement energy code training and technical support programs. Given that most Northeast states recently updated their energy code requirements, effective energy code implementation will be the primary focus of Project activities in 2004. More specifically, Project objectives for 2004 includes:

- Support information exchange and knowledge transfer through two face-to-face meetings of the Northeast Regional Energy Code Advisory Committee, four newsletters, Project Web site, four topical teleconferences and one workshop regarding relevant energy code development and implementation topics and issues.

- Provide technical support, as requested, for state energy code development and evaluation activities in the entire region, including development of evaluation materials; learning and information transfer between states on relevant issues; and coordinated input to national energy code development (e.g., 2005 ICC update, ASHRAE 90.1).
- Provide policy and program coordination and support, as requested, to the entire region to align Project goals with ratepayer-funded energy efficiency program activities to move energy code development and support activities in the direction of increased sustainability including coordination with "beyond code" programs (e.g., Energy Star Homes, Advanced Building Guidelines, LEED, Build America, etc.).
- Assist state energy code administrators to identify and access resources to support energy codes development and implementation activities (e.g., financial and program support from utilities, industry trade allies and the federal government);
- Assist at least five Northeast states, including Massachusetts, Rhode Island, Vermont, Maryland and Connecticut, to implement the new commercial energy code and beyond code training program.
- Assist at least two Northeast states, including Massachusetts and Rhode Island, to pilot an innovative building energy code officials mentoring program.
- Assist at least three Northeast states, including Massachusetts, New Jersey and Connecticut, to implement the Northeast Residential Builder Training Program to reach a majority of residential builders regarding best design and construction practices to meet or exceed minimum energy code requirements.

Cost Data:

Federal	\$249,540
Partner Cost Share	\$ 94,570
TOTAL	\$344,110

Partners

Rhode Island State Energy Office, NEEP, Massachusetts and Rhode Island Utilities

Background

Currently, South Dakota has no Commercial Building Energy Code. This is the first South Dakota proposal for Building energy code assistance under the Special Projects grant program.

Purpose

By requiring South Dakota to meet or exceed ASHRAE Standard 90.1-1999, South Dakota can raise the standard of energy efficiency in new buildings. The purpose of this project is to establish the baseline for building practices in South Dakota and develop the infrastructure for adopting improved building energy standards.

Project Description

South Dakota will examine current energy related practices, evaluate Standard 90.1-1999 and examine energy codes and practices from similar and surrounding states like Wyoming, Minnesota, Iowa and North Dakota. The State Energy Office will identify, establish and develop partnerships throughout the state. The SEO will then select an average current commercial, manufacturing, and educational facility in the State to be used to model and simulate the current and proposed practices for the associated building type. Projected savings will be used to support the adoption of an improved commercial building energy code. The SEO will integrate and shape Standard 90.1-1999 to accommodate the unique needs of South Dakota, and educate and disseminate information to the building contractors, building owners, engineers, and architects of South Dakota.

The project will perform six tasks:

- Evaluate current practices.
- Develop partnerships.
- Model and simulate current and proposed practices.
- Develop building energy codes.
- Educate the public and distribute information to building contractors, building owners, engineers, and architects.

Cost Data

Federal	\$ 87,939
Other	\$ 41,492
Total	\$129,431

Background

The Texas Legislature adopted the 2000 IECC as part of comprehensive legislation (Senate Bill 5) addressing air quality problems in the major metropolitan areas of Texas. Since then, the Texas Energy Partnership has coordinated training and education efforts for the Texas building industry. This latest project enlists the partnership of the Texas Association of Builders in the state-wide effort to educate builders and building officials toward successful adoption and compliance of the new state energy code.

Purpose

The main objectives of the project include:

- Support the successful implementation of the new state energy codes through local training workshops, targeted at specific groups.
- Teach building science and building performance issues using the energy code as a platform and springboard to address construction methods that will help to reduce mold and moisture intrusion.
- Produce and disseminate 10,000 video recordings, in English and in Spanish to TAB's members and associates to further facilitate promotion and proper implementation of energy codes and mold resistant construction.

Project Description

The team effort of the State Energy Conservation Office (SECO), Texas Association of Builders (TAB), Building Performance and Comfort Inc. (BPCI), Building Media Inc.(BMI), and Building Code Assistance Project (BCAP), will provide a successful training project built upon the successes of previous SECO funded training efforts, both past and in process. Another area where training and technical assistance will produce new benefits is in above-code, mold resistance construction practices. One third of the workshop trainings will be devoted to addressing these issues in the context of proper implementation of the energy code. This focus on quality construction practices is expected to/has proven to be an important draw for the target audiences.

The primary goal of this project is to significantly enhance Texas' enforcement and implementation of its newly adopted, state building energy

performance standards, among the most stringent in any state, and affecting several of the most active and influential construction markets in the nation. This program will build upon the successes of the previous U.S. DOE-funded.

This project will produce the following benefits:

- A coordinated outreach service that takes into account the unique characteristics of each Texas community.
- Customized technical assistance to communities, helping them develop and implement their own solutions for energy efficient building practices.
- Creating statewide recognition of the importance and value of implementing energy efficiency standards in construction.
- Help the building community in Texas achieve its goal of building cost effective, high value buildings that meet or exceed the new state energy code requirements.

Cost Data

Federal	\$200,000
Other	\$ 66,575
Total	\$266,575

Background

All newly constructed residential dwellings and commercial structures in the state of Utah must comply with the 2000 IECC and ASHRAE 90.1 (1999) respectively. In order to increase the effect of these standards and ensure compliance, the Utah Energy Office will continue education of the industry.

Purpose

Through this project, the Utah Energy Office (UEO) plans to continue to strengthen the training, education, and outreach campaigns associated with the 2000 IECC as well as develop training and education focused on ASHRAE 90.1 (1999) for light commercial buildings. A goal of this concentrated training and educational project is to strongly encourage 'whole-house performance based' compliance with the 2000 IECC through market driven strategies linked to the physical and financial benefits of the code such as reduced call-backs and a higher quality control of the finished housing product through more extensive field and site inspections. The UEO will stress that better code compliance, enforcement, and implementation comes through concentrated 'one-on-one' training & technical workshops and greater access to a centrally located web-based Internet resource site for key industry partners (both public & private). As demonstrated through past studies and consumer surveys, the UEO feels it is important to continue to work on emphasizing the tangible benefits associated with energy code compliance. A driving element of this project is the increased recognition of and demand for energy efficient housing in Utah.

Utilizing the 2000 IECC, The UEO will continue to refine past code training processes and effectiveness as well as provide a way for all stakeholders to have greater access resources and training. Continual educational seminars and workshops will be provided to building community partners such as members of the local chapters of the ICBO, regional HBA chapters and new homebuyers (utilizing such forums as the "First Time Home Buyer" workshops sponsored by Fannie Mae and FHA). A notable success of past education and code compliance efforts has been the development of a 'consumer friendly' 2000 IECC Field Guide for use by building inspectors

when inspecting for compliance during a site visit. The UEO plans to emphasize the benefits associated with the 2000 IECC including a stronger emphasis on the importance of performance testing for air and duct leakage, streamlined code compliance implementation (using the Field Guide as a tool), as well as improving the existing energy code technical support base. In addition to working with the 2000 IECC, and due to the decline of qualified and trained consultants involved with the Commercial Energy Codes (ASHREA 90.1 1999) in Utah the UEO plans to work on developing a cadre of individuals who can assist the state in providing plan reviews and site visits on various state projects and educational projects requiring compliance with ASHRAE 90.1 1999.

Project Description

This project will have the following components:

- Provide a training curriculum and protocol emphasizing the benefits of performance based compliance and enforcement, as well as a IECC 2000 specific 'Guide to Sealing Air Leaks for Utah Residences' designed to address these compliance requirements based upon the 'needs and desires' of the building officials and residential energy efficiency practitioners working out in the field.
- Due to the increased demand for energy efficient homes (through the public awareness of such programs as the EPA Energy Star™ HOMES Program) the UEO will provide additional consumer oriented training and technical assistance workshops and seminars along with the development of working partnerships between local code officials, building departments, and the housing industry.
- Refine and strengthen the existing web-based technical resource network/web-site with additional consumer-friendly information and resources for all stakeholders involved in the residential building code arena.

Cost Data

Federal	\$50,000
Other	\$20,000
Total	\$70,000

Background

The Washington State Energy Code is one of the Nation's most rigorous and the state continues to examine and adopt provisions that would make the code more effective at bringing about the construction of more efficient buildings. The energy code is scheduled for review every three years, with 2004 being the next scheduled year for implementing proposed changes reviewed in the fall and winter of 2003/2004.

In July 2002, a substantial upgrade to the residential and non-residential sections of the code went into effect. These upgrades mandate increase in the envelope requirements for residential construction and the adoption of ASHRAE 90.1-1999 Equipment Standards, new prescriptive lighting fixtures and controls, and minimum requirements for commissioning of HVAC and lighting systems.

Purpose

The main purpose of this project is to support implementation of Washington State Energy Code and the upgrades that will take effect in 2004, and to support broader information sharing about code enforcement and code compliance issues

Project Description

Washington proposes to –

- Provide support to the Code implementation and adoption process
- Conduct assessment of the effectiveness of the commissioning requirements of the non-residential components of the Washington State Energy Code
- Participate in National and Northwest regional collaboration on code enforcement and builder training programs

Cost Data

Federal	\$143,836
Other	\$ 50,150
Total	\$ 199,986

Partners

Washington Code Council
Northwest Energy Efficiency Alliance
State of Oregon
State of Montana
State of Idaho

Transferability

WSU proposes to conduct an assessment of the experience with the lighting and HVAC systems commissioning requirements in the current non-residential code. An assessment of the experience would be valuable to the code development effort in Washington and should be of assistance to code jurisdictions around the country considering similar requirements.

State: Wisconsin

Award Amount: \$84,985

Cost Share: \$186,263

Grant Period: 10/03 – 7/06

Title: Wisconsin Residential Energy Code Training & Statewide Conference

Summary

New Wisconsin residential energy code requirements went into effect on August 1, 2003. To support the transition to the new code, the Department of Administration (DOA) will hold a two-day statewide residential buildings conference in 2004 and a series of eight half-day trainings on the residential energy code. The Energy Center of Wisconsin will carryout most project tasks while DOA will manage and direct project activities through a public/private partnership composed of the DOA, the Department of Commerce, the Energy Center of Wisconsin, the Wisconsin Energy Conservation Corporation and the Wisconsin Builders Association.