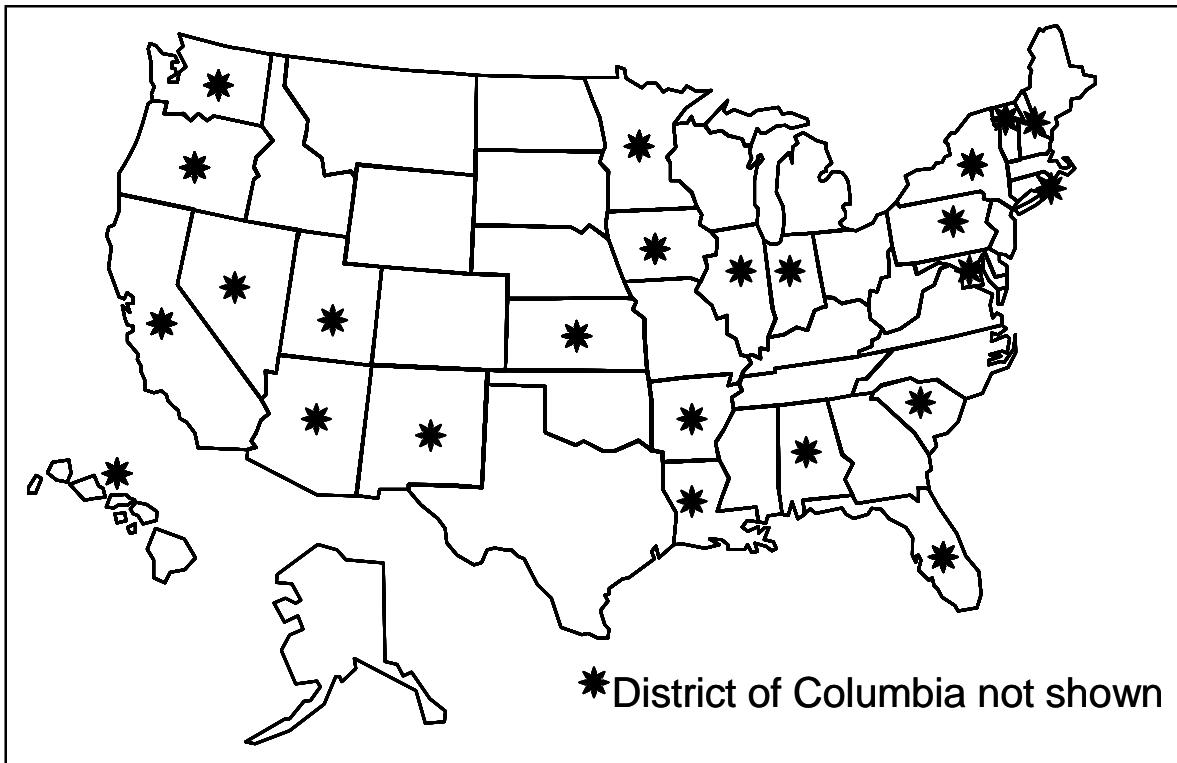




US DEPARTMENT OF ENERGY
OFFICE OF CODES AND STANDARDS

Building Standards and Guidelines Program

2000 *State Grant Summaries*



October 2000

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Foreword

This report is one in a series of documents describing activities in support of the U.S. Department of Energy (DOE) Building Standards and Guidelines Program (the Program.) The Pacific Northwest National Laboratory (PNNL) provides technical support for the Program.

The primary issue addressed by the Program (and other programs at DOE) is that new commercial and residential buildings being designed, built, and occupied do not use currently available, technically feasible, and economically justified technologies and practices to eliminate wasteful use of energy. The Program seeks to advance the energy-conserving design and construction of buildings by promoting and assisting in the development and implementation of energy-efficient codes and standards that are technically feasible, economically justified, and environmentally beneficial. These activities are required of DOE by Title III of the Energy Conservation and Production Act as amended by the Energy Policy Act of 1992 (EPAct).

The Program's long-term goal is to make sustainable, energy-efficient building design and construction commonplace. The Program's approach to meeting this goal is to initiate and manage individual research in this area, standards and guidelines development efforts that are planned and conducted in cooperation with representatives from throughout the buildings community. Current projects involve practicing architects and engineers, professional societies and code organizations, industry representatives, and researchers from the private sector and national laboratories. Research results and the technical justification for standards criteria are provided to standards development and model code organizations and to Federal, state, and local jurisdictions as a basis to update their codes and standards. This approach helps ensure that the standards incorporate the latest research results to achieve maximum energy savings in new buildings, yet remain responsive to the needs of the affected professions, organizations and jurisdictions. It also assists in the implementation, deployment and use of the codes and standards.

The Program works in cooperation with DOE's "Energy Partnerships for a Strong Economy," which is an innovative approach to environmental quality and economic growth designed to leverage Federal dollars through partnerships with private industry. This program does not duplicate, but rather complements, existing Federal and State programs and accelerates their benefits. Located under the umbrella of "Energy Partnerships for a Strong Economy," Action 10 of the Climate Change Action Plan, Update State Building Codes, builds on Section 101 of EPAct to further address the use and enforcement of building energy codes. Under Section 101, states are required to update their commercial building energy codes to meet or exceed the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc./Illuminating Engineers Society of North America (ASHRAE) Standard 90.1-1989 and to consider whether to update their residential codes to meet or exceed the 1993 Model Energy Code. DOE is required to provide technical assistance and incentive funding to states to respond to the legislative requirements of EPAct.

Summary

During FY 2000, 25 states and the District of Columbia received grants totaling approximately \$4 million to update and implement the energy efficiency provision of their state building code. The grants were awarded on a competitive, cost-shared basis. Some of the states have existing energy codes but need additional support to expand or enhance their code to equal or exceed the 1993 Model Energy Code (MEC) and ASHRAE/IESNA Standard 90.1-1989 (Standard 90.1-1989).

The MEC is an energy performance standard for low-rise residential buildings and the Standard 90.1-1989 is an energy performance standard for commercial and multi-family high-rise buildings. The MEC and Standard 90.1-1989 are benchmark residential and commercial standards under the Energy Policy Act of 1992 (EPAAct).

This document contains summaries of Building Standards and Guidelines Program (the Program) FY 2000 incentive grants for the 25 states and DC. The summaries provide background information on the status of the state code, outline state project descriptions, cost data, partners, transferability to other states, and the value of incentive grants to the Building Standards and Guidelines Program. The funding will help develop codes where they do not exist and strengthen existing building codes. In addition, the assistance will help builders, states, and consumers to make buildings more energy-efficient and cost-effective.

Background

Alabama adopted the Residential Energy Code for Alabama (RECA) in 1996. The standards in RECA are equivalent to the 1993 Model Energy Code (MEC). RECA, however, is totally voluntary and must rely on local governments to adopt it as part of their building code. To date, no jurisdiction has adopted RECA.

All of the results of the project will be transferred to other states in the region through participation in the Southern Regional Building Energy Codes Collaborative and Southern States Energy Board residential project. Experiences gained from the project could serve as a model for other states and regions to address the need to have local jurisdictions adopt state energy codes.

Purpose

The primary goal of the project is adoption of the state energy code by local governments. An additional expected outcome is the creation of alliances in Birmingham, Mobile, and Montgomery among trained and motivated lenders, builders, real estate agents, real estate appraisers, and residential energy efficiency professionals. These alliances will then work together to create greater consumer demand for homes that have been documented as energy efficient through an independent building performance analysis.

Project Description

Alabama proposes to do the following:

- Educate local building departments of the benefits of RECA and work with them in adopting it as part of their local code.
- Educate the housing industry of the benefits of building homes to meet RECA and construction practices that will allow a builder to meet the code without additional significant costs.
- Work with mortgage lenders to offer preferred financing for homes that are demonstrated to meet the RECA.
- Work with energy technology suppliers and building science professionals to convince their builder clients to build energy-efficient homes and demonstrate their compliance to RECA.

Cost Data

Federal	\$ 86,440
Other	\$ 28,813
Total	\$115,253

Transferability

Background

The City of Tucson and Pima County adopted the Model Energy Code (MEC) in 1994, and updated their standards to the 1995 MEC level in 1996. Both governments remain the only jurisdictions in Arizona to have adopted the MEC. The Building Code Committee approved the Sustainable Energy Standard (SES) in April 1998, as a modification to the MEC. The SES is regionally specific and exceeds the MEC performance standards by 50%. All buildings in the new community of Civano, by legally binding agreement, must meet the SES. In June 1998, the City of Tucson adopted the SES requirements for construction of its own facilities. Tucson and Pima County are expected to adopt the International Energy Conservation Code (IECC).

Purpose

The primary goal of the project is to conserve energy by successfully implementing the new IECC and the locally-adopted Sustainable Energy Standard, where applicable.

Project Description

The Teaching Energy Conservation Program (TEC) proposes to:

- Conduct a baseline analysis of recently constructed buildings to determine how well they perform relative to MEC and SES standards.
- Target the twenty largest residential builders in the metro area (who build over 80% of the area's new homes).
- Update existing utility training programs to reflect the standards of the IECC and the experience of other code implementation programs such as California's Builder Training on Energy Codes.
- Provide added incentive to building industry participants by offering on-site technical assistance following the training.
- Provide follow-up evaluation of buildings to determine the effectiveness of the training and technical assistance.
- Develop new training materials for

implementation of the IECC for commercial buildings.

- Conduct analyses of building energy performance for residential and commercial builders who have participated in the program.

Cost Data

Federal	\$238,000
Other	\$123,090
Total	\$361,090

Partners

City of Tucson
Southwest Gas Corporation
Tucson Electric Power Company
Southern Arizona Home Builders Association
Arizona Builders' Alliance
American Institute of Architects
Tucson Institute for Sustainable Communities
Community of Civano, LLC

Transferability

The SES can serve as a model for other communities' energy conservation efforts, particularly those in hot, arid climates. Because it is grounded in the MEC, and has been adapted to conform to the new IECC, other municipalities can easily modify it to meet local conditions.

Background

Arkansas is a rural state comprised of 75 counties that have no building permit requirements. By law, the Energy Code (1992 MEC) applies to all new buildings; however, only 114 of the 500-plus communities have any type of building permit process. To date, 12 of these communities have adopted the Energy Code; this represents only about 17 percent of total housing permits.

Purpose

The goal of the project is to provide greater levels of education and information for builders, code officials, and others in the building trades and to encourage a larger segment of the building community to meet or exceed the minimums of the Energy Code as well as to build a better performing building.

Project Description

Arkansas proposes to do the following:

- Establish web-based and printed information outlets that are vehicles for disseminating information to building industry stakeholders, as well as homebuyers and homeowners, about energy code and building energy performance issues.
- Develop an interactive web site for communication with the many segments of the building industry.
- Establish a coalition of building industry organizations that can work together on project demonstrations and provide advisory support to the Arkansas Energy Office.

Cost Data

Federal	\$37,400
State	\$12,900
Total	\$50,300

Transferability

The strategy developed to encourage builders to meet or exceed the minimum requirements of the code will be transferable to other states that have similar constraints and characteristics.

Background

This proposal continues the builder energy code training program that has been provided to builders in California through the California Energy Commission (CEC) and the Building Industry Institute (BII) public-private partnership funded through DOE grants. This program continues to focus on the largest, most influential builders in the major markets. In the past four years, 289 companies have been trained resulting in over 72,000 homes being built to a new standard of energy efficiency, and consumer energy savings related to the first year of ownership of these homes is more than \$1,385,000 and will continue to accrue for the life of the buildings.

Purpose

A specific goal of this project is to continue the training efforts and accomplishments from prior years. Additional goals include the effective collaborative efforts with the wide variety of participants, which have resulted in the development of additional programs and tools to further energy-efficient, quality construction; to develop a close partnership with utilities to provide much needed additional training sessions not only for builders but for building officials and architects; and to seek additional avenues to publicize the components, accomplishments and advantages of the training.

Project Description

This project includes:

- Builder training that begins with a review and critique of current compliance documentation.
- Classroom training for builders' V.P. of Construction, purchasing agents, and contracts personnel to instruct on how to read compliance documentation, what are typical problems with the documentation, and how to direct their subcontractors to correctly bid and properly install the required energy code features and/or equipment.
- The builders' own homes under construction are examined (typically two homes - one in the framing, insulation stage, and one nearly final). Builders are provided a field inspection checklist for their use.

- Instructors perform diagnostics on site such as envelope air leakage, duct leakage, airflow from registers, and system static pressure for the participants.

Cost Data

Federal	\$100,000
Applicant	\$ 39,516
Total	\$139,516

Partners

Building Industry Institute
California Building Industry Association
Nevada Home Builders Association
National Association of Home Builders
ConSol

Transferability

This training program was developed for both Nevada and California, and it is quickly exportable to other states. The California Energy Commission's web site contains most of the materials from the actual training manual, including the protocols for proper installation of insulation, caulking and sealing, installation of windows, and HVAC design and installation.

Background

California has a history of using its nonresidential building energy efficiency standards to reduce wasteful, uneconomic, and unnecessary uses of energy. In 1977, California mandated building efficiency standards to reduce the growth rate of energy consumption, conserve energy resources, and ensure statewide environmental, land use and public safety goals were met. California's revised Title 24 Standard went into effect July 1, 1999. Title 24 meets or exceeds ASHRAE/IESNA 90.1.

Purpose

This project is the second phase of a two-phase project to improve the construction quality of new nonresidential buildings through building acceptance testing, diagnostics, and third-party verification. The work includes developing the technical feasibility and economic justification for alternative approaches, as well as the mechanisms that would be used to implement the approaches. The project's first phase was funded in part by a DOE State Energy Program grant in 1999. Pacific Gas & Electric and the California Energy Commission also funded Phase I activities.

The overall project strategy has three key themes:

- Developing performance-based approaches to ensure quality construction that is compatible with implementation of the Standards
- Evaluating the potential for specific technologies to deliver reliable energy savings
- Integrating technologies and educational programs promoted by utilities through public goods charges into performance-based approaches to compliance with the Standards.

Project Description

California proposes to do the following:

- Develop specific proposals to amend the Standards, including performance-based compliance approaches, for consideration in the rulemaking proceeding for the next round of Standards revisions.
- Implement a market transformation exit strategy that moves technologies promoted by utilities through publicly supported incentive programs into minimum codes or standards of practice.
- Evaluate the technical basis of IESNA RP-28 (recommended practice guideline for use in designing lighting systems for buildings that serve elderly people) and its application to California's standards.
- Investigate how commissioning would be used as an alternative to traditional building code enforcement.
- Provide a platform for future market-based programs.

Cost Data

Federal	\$200,000
Other	\$ *
Total	\$200,000

*full match was provided with Phase I project

Partners

Pacific Gas & Electric
New Buildings Institute

Background

The District of Columbia (DC) adopted the 1999 Construction Codes Supplement in late October 1999. Although there was a two-year delay, the Supplement which adopts the 1996 BOCA Building Code (in its entirety), CABO/MEC 1995, and ASHRAE/IESNA 90.1, etc. is currently under full enforcement.

Purpose

The purpose of this project is to expedite the adoption and implementation of the 1998 International Energy Conservation Code (IECC) by DC within an 18-month period and provide training activities and impact forums to DC stakeholders to foster greater public understanding and gain public support for the new code.

Project Description

DC proposes to do the following:

- Procure, acquire, and disseminate copies of the 1998 IECC to interested parties.
- Hire a consultant to coordinate all aspects of the project.
- Review the 1998 IECC.
- Consult on code provisions, develop and prepare technical recommendations on the 1998 IECC, as well as its major impacts over current energy code.
- Submit draft 1998 IECC package of recommendations for review and concurrence certification.
- Provide technical information as appropriate to the review and concurrence in code package.
- Monitor processing of code adoption package.

Cost Data

Federal	\$50,000
Applicant	\$16,667
Total	\$66,667

Background

In Florida, the residential energy code is a state-developed code that exceeds the 1995 Model Energy Code (MEC) and is mandatory statewide. The commercial energy code is a state-developed code that meets or exceeds ASHRAE/IESNA 90.1 and is mandatory statewide. The State Building Commission has been actively pursuing a complete overhaul of the Florida Building Code. It is expected that either through the Florida Building Commission or otherwise, the State will upgrade its code to conform to ASHRAE/IESNA 90.1-1999.

Purpose

The principal objective is to substantially improve building energy efficiency in Florida through code-based mechanisms, including the administrative adoption process and development of user-friendly software tools that encourage compliance. The primary goal is to develop software tools that can be continually and easily updated to conform to evolving energy efficiency standards such as ASHRAE/IESNA 90.1 and the International Energy Conservation Code (IECC).

Project Description

Florida proposes to do the following:

- Develop completely new algorithms necessary to adopt ASHRAE/IESNA 90.1-1999 into EnergyGauge®-Flacom.
- Develop the necessary software structure, algorithms, and features necessary to incorporate thermal storage credits as adopted by the Florida Building Commission into EnergyGauge®-Flacom.

Cost Data

Federal	\$50,000
State	\$ 5,001
Other	\$22,660
Total	\$77,661

Transferability

Florida maintains an active alliance with other southern states through the Southern States Energy Board. This alliance is also expected to prove equally productive in efforts to transfer Commercial Code capabilities among the various southern states that would be impacted by emerging cooling and dehumidification technologies.

Background

Hawaii has its own Model Energy Code which incorporates some cooling climate technologies, but there are others available that may be underutilized.

Purpose

To conduct research necessary to lead the way in improving building efficiency by bringing superior technologies to the fore. By incorporating cooling climate technology, Hawaii's energy code can serve as a market-transforming catalyst to high-efficiency buildings in warm climates.

Project Description

Hawaii proposes to do the following:

- Determine which high-performance windows are uniquely suited to Hawaii and are cost-effective. Utilize simulations with Hawaii-specific weather data.
- Gather and compile field data to determine which combinations of roof color, insulation and radiant barriers dramatically reduce interior temperatures in Hawaii's buildings and residences, often removing the need for air conditioning and increasing occupants' comfort levels.
- Compile and summarize reports and studies indicating that daylighting can be extremely cost-effective and increase occupant productivity.
- Determine which daylighting controls are most effective in Hawaiian conditions in avoiding manual overrides and maximizing comfort and visual acuity.
- Compile field data and summarize reports on ultra-violet lamps in building air handlers to determine to what extent they reduce energy use, improve indoor air quality and reduce maintenance costs.
- Compile field data and summarize reports on the effectiveness of heat pipes in economically reducing the moisture content of incoming air, replacing reheat coils and reducing air conditioning loads.

Cost Data

Federal	\$190,000
Applicant	\$ 67,222
Total	\$257,222

Transferability

Project results may also interest Southeast Asian and other warm-weather nations.

Background

In May 1998, the Chicago Department of Buildings began a comprehensive effort to update the Chicago Building Code, which is comprised of regulations for electrical, life safety, architectural, structural, elevators, mechanical, plumbing and energy (in the future). The Department of Buildings recently established a working group to draft an energy code for the city. The working group intends to implement the 2000 International Energy Conservation Code (IECC) with specific City of Chicago amendments. The process for initiating code revisions requires each technical committee draft to be reviewed by city agencies, then by a private sector advisory committee. The last and final step is introduction in the City Council and public hearings. It is expected that the Council will pass approximately half of the drafts this year; the remainder in 2001.

Purpose

The goal of the project is to facilitate the acceptance and implementation of the 2000 IECC in the City of Chicago through outreach, training, and code enforcement.

Project Description

The project proposes to do the following:

- Develop promotional materials for use in educating stakeholders as to the benefits of the energy code.

- Develop and implement an extensive training plan for the 2000 IECC to include: develop training curricula and training materials; develop a code officials' certification program; schedule a broad range of training sessions for code officials, builders, architects, engineers, and other stakeholders; and conduct educational outreach to the general public.

Cost Data

Federal	\$214,000
Other	\$ 54,000
Total	\$268,000

Transferability

The City has agreed to author the code so that it is applicable to the greater Chicago metropolitan area. Other home-rule states should be able to benefit from the strategy of city adoption and regional information dissemination as well. The City also plans to make basic building science and advanced code training an integral part of the overall education efforts. This should serve as a model to other states to follow in avoiding some of the technical problems that have sometimes resulted from improper implementation of energy efficiency measures.

Background

The State of Indiana is updating residential energy code requirements from the current 1992 Model Energy Code (MEC) to an Indiana-specific energy code based on Chapter 11 of the 2000 International Residential Code (IRC) with amendments from the 2000 International Energy Conservation Code (IECC). Indiana will enforce the new energy code beginning in January 2001.

Purpose

The goal of the project is to ensure the successful adoption and implementation of an IECC-based energy code for Indiana, as well as moving neighboring states closer to IECC adoption through education. Builders in the neighboring states of Illinois, Kentucky, and Michigan have little or no energy code experience, but often work in Indiana, which hinders code compliance in Indiana.

Project Description

Indiana proposes to do the following:

- Develop training materials (including a workbook).
- Conduct one-day training sessions at 10 sites in Indiana.
- Develop customized training materials for Illinois, Michigan, and Kentucky.
- Conduct training sessions at 17 sites in Illinois, Michigan, and Kentucky.
- Present results at the National Energy Codes Conference and publish a report.

Cost Data

Federal	\$110,000
Other	\$100,000
Total	\$210,000

Transferability

The training materials developed will be useful to other states that are using the energy code provisions from the IRC. Because Chapter 11 of the IRC and Chapter 6 of the 2000 IECC are identical, the materials will be useful for training on the IECC as well. States will have the opportunity to modify the electronic version of the training materials for their own needs.

Background

The Department cooperated with the Iowa State Building Code Commissioner of the State Fire Marshall's office in the adoption of the 1992 CABO Model Energy Code for residential buildings and ASHRAE/IESNA 90.1-1989 for commercial and high-rise residential buildings. The Iowa State Building Energy Code applies statewide but is enforced by local jurisdictions. Local jurisdictions are responsible for plan review and field inspection of all buildings subject to state building energy codes; however, neither the plan review nor the field inspections are being performed routinely and consistently.

Purpose

The goal of this project is to increase building energy code compliance in Iowa. The goal will be achieved through a three-pronged approach: 1) building energy code enforcement, 2) homebuyer and key stakeholder education, and 3) case study and demonstrations.

Project Description

The State of Iowa proposes to do the following:

- Implement a pilot circuit rider program in a minimum of five communities in Iowa. A baseline study will be conducted during the community selection process to assess baseline understanding of the building energy codes and to determine if, where a good understanding exists, the building energy codes have been adopted and at what level they are being enforced.
- Develop and disseminate an informational publication to homebuyers and key community stakeholders through a variety of avenues.
- Incorporate all building energy code requirements into statewide community and vocational technical colleges building trades construction projects. The colleges will support use of the projects as case study demonstrations, for data collection and for workshops and field days.
- Evaluate the project quarterly to ensure building energy code compliance and enforcement are achieved.

Cost Data

Federal	\$229,800
Other	\$ 76,600
Total	\$306,400

Partners

Iowa Realtors Association
 Iowa Mortgage Banker's Association
 Iowa Association of Building Officials
 Iowa League of Cities
 Iowa State Building Code Commissioner
 Moeller Enterprises
 Iowa Central Community College
 Kirkwood Community College
 NE Iowa Area Vocational Technical College
 Iowa Western Community College
 Indian Hills Community College
 Skogman Homes

Transferability

Once the consumer programs, specifically those geared towards real estate agents, appraisers and builders, are approved for continuing education accreditation, these programs can easily be replicated for other states.

Upon completion of the pilot program, the community-wide systematic methodology can be duplicated in many states, especially those with largely rural populations.

Background

Kansas received SEP funding in 1997, 1998, and 1999 and trained over 350 architects, engineers and code officials on ASHRAE/IESNA 90.1-1989 and over 250 builders, code officials and trade allies on the Model Energy Code (MEC). Past efforts have also focused on informing the building community about the energy standards requirements of state law, detailed review of standards requirements, and the economic benefits of energy efficiency and attempting to create a greater market pull for code compliance and energy efficiency. This project would continue Kansas' effort to achieve code compliance and higher energy performance in new commercial and residential buildings.

Purpose

The goals of this project are to achieve actual energy performance of new commercial buildings constructed in Kansas equal to or greater than resulting from compliance with ASHRAE/IESNA 90.1-1989 and actual energy performance of new residential buildings constructed in Kansas equal to or greater than resulting from compliance with the MEC.

Project Description

The project will:

- Inform the public and the commercial and residential building design and construction community about building energy standards requirements in Kansas and the many benefits that accrue from meeting them.
- Encourage local adoption and enforcement of building energy codes by adopting the energy sections of new building codes in conjunction with regular cyclical updates.
- Provide training for the commercial and residential building design and construction community about how to comply with building energy standards requirements in Kansas and energy-efficient design and construction methods.
- Raise building energy performance expectations by commercial and residential building owners.
- Understand the real energy performance of commercial and residential buildings being built

in Kansas to permit better, more cost-effective, program design.

Cost Data

Federal	\$195,000
Other	\$ 94,860
Total	\$289,860

Partners

Kansas Corporation Commission
Kansas State University Engineering Extension
Coriolis
Kansas Building Science Institute

Background

Louisiana instituted a mandatory statewide energy code for commercial buildings on January 1, 1999. Additionally, Louisiana has been working to promote local adoption of the 1995 Model Energy Code (MEC).

Cost Data

Federal	\$275,000
State	\$ 91,670
Total	\$366,670

Purpose

The goals of the project are to continue a high level of support for the mandatory Louisiana statewide commercial energy conservation code, continue efforts to encourage local adoption of the MEC, to measure in-field implementation and effectiveness of commercial and residential energy codes in Louisiana, and to develop standardized code implementation and effectiveness protocols that can be used nationally.

Project Description

The project will:

- Continue training of commercial building professionals and the residential building community.
- Continue technical support and a toll-free hotline.
- Continue efforts to promote local adoption of the MEC.
- Assess level of commercial building compliance with the mandatory statewide commercial building energy conservation code.
- Assess level of residential building compliance with the 1995 MEC and the 2000 International Energy Conservation Code (IECC).
- Develop standardized national protocols for assessing energy code compliance.

Background

Under the Maryland Public Service Commission, the Codes Administration of the Maryland Department of Housing and Community Development will be adopting the 2000 International Energy Conservation Code (IECC) into the Maryland Building Performance Standard's regulations. The proposal is to continue work begun two years ago to evaluate the effectiveness of previous training efforts and prepare a training plan based on the newly established criteria.

Purpose

The goal of this project is to adopt through rulemaking the 2000 IECC and to develop a detailed training plan to ensure the updated energy code is properly implemented.

Project Description

The project will:

- Conduct a baseline survey of current, new construction building practice in conjunction with Maryland utilities.
- Review existing/draft codes.
- Conduct a cost/benefit analysis to justify code adoption.
- Develop/modify codes.
- Prepare rulemaking in codified form to be included in the Maryland Building Performance Standards.
- Conduct code council seminars and provide information and education to key council members.
- Review, modify and/or develop compliance materials.
- Develop a detailed code training plan.

Cost Data

Federal	\$50,000
State/Local	\$18,000
Total	\$68,000

Background

This project follows four years of an Energy Code Advancement Project (ECAP) conducted under 1995, 1996, and 1998 DOE grants to upgrade and provide training for the Minnesota energy code. This proposal will use the progress made under the previous ECAP grants to evaluate the effects of the new code and the education provided on actual construction practices. Minnesota's residential building code provisions exceed the requirements of the 1995 Model Energy Code (MEC), and its commercial building energy code meets or exceeds the requirements of ASHRAE/IESNA 90.1-1989. Minnesota's energy code now addresses issues such as transformer efficiency standards and residential protection against excessive depressurization.

Purpose

The goal of the project is to conduct a two-year effort to perform several projects related to improving implementation of Minnesota's 2000 energy code.

Project Description

Minnesota proposes to do the following:

- Share information on Minnesota's success with other states.
- Support real estate agent education by upgrading an existing course and accrediting it for continuing education credit.
- Develop transformer education written and presentation materials for building owners, electrical contractors, and electrical engineers.
- Investigate the feasibility of success of amending the National Electrical Code to include the NEMA TP-1 standard.
- Produce a video and CD-ROM illustrating the construction details of a home built to the new energy code requirements.
- Produce two editions of the Home Builders' Energy Update to further explain details of the energy code.

Cost Data

Federal	\$57,055
Applicant	\$34,723
Total	\$91,778

Partners

Builders Association of Minnesota
 State Building Codes and Standards Division
 Local Chapters of the International Code Council
 Minnesota Chapter of the International Association of Plumbing and Mechanical Officials
 University of Minnesota
 Sheet Metal and Roofing Contractors Association
 Plumbing, Heating, Cooling Contractors Association
 Minnegasco Reliant Energy
 Minnesota Society of Architects
 ASHRAE Minnesota Chapter
 Consulting Engineers Council
 Minnesota Electrical Association
 North Central Electrical League

Transferability

The issues the Minnesota energy code now addresses will serve as trends for future state and national model codes.

Background

Currently Mississippi has a residential code that is less stringent than 1992 Model Energy Code (MEC) and a commercial code that is less stringent than ASHRAE/IESNA 90.1-1989. Mississippi also has no statewide construction code; although some of the counties and cities have various construction codes in place, many have no minimum construction standards.

Cost Data

Federal	\$50,000
Applicant	\$16,667
Total	\$66,667

Purpose

The goals of the project are to establish an energy efficiency standard for new construction statewide based on the International Energy Conservation Code (IECC), or equivalent to the 1995 MEC and ASHRAE/IESNA 90.1 and to train local building code officials, builders and designers to comply with the energy code using simplified software compliance tools.

Project Description

Mississippi proposes to do the following:

- Establish an energy efficiency standard for new construction statewide based on the IECC, or equivalent to the 1995 MEC and ASHRAE/IESNA 90.1-1989.
- Provide training and information on the code to building code officials, builders, architects, engineers, heating and cooling contractors, utility and insurance company representatives, lenders, realtors, and appraisers.
- Set up a professional organization, Mississippi Certified Energy Professionals, to provide certification and ongoing technical training.

Background

The State of Nevada adopted the 1986 edition of the Model Energy Code (MEC) by reference with minor state amendments in 1988. This code is applicable only where the local jurisdiction has not adopted an energy code. Energy code enforcement occurs only at the local government level and energy code requirements have typically been adopted without ensuring uniformity among neighboring building department jurisdictions.

Only a few jurisdictions in the state have adopted the 1995 MEC (City of Reno, Lyon County and Boulder City) even though most are now enforcing the 1997 Uniform Building Code that references this edition of the MEC. The City of Las Vegas, Clark County, and neighboring jurisdictions have adopted the 1992 MEC for residential construction and are enforcing the commercial provisions as presented in the 1992 MEC (ASHRAE 90A-1980).

Purpose

The goal of the project is to assess the rate of code compliance with the MEC in jurisdictions that have adopted the code, to increase energy code enforcement through education in the jurisdictions that have adopted a version of the MEC, and to assess current construction practice quality for residential occupancies as it relates to building energy codes.

Project Description

Nevada proposes to do the following:

- Assess the current quality and rate of energy-efficient construction practices relative to the 1992 MEC and 1995 MEC, where they have been adopted and enforced.
- Evaluate how current building practice compares with the provisions as presented in the 1998 and 2000 International Energy Conservation Codes. The assessment will involve on-site plan review and field inspection of 200 single-family residential buildings in Northern and Southern Nevada. Construction data will be collected during this process so that a baseline of "typical" residential construction can be established.

- Provide training to code enforcement personnel from each jurisdiction that cooperates in the data collection program.

Cost Data

Federal	\$153,434
Applicant	\$ 25,573
Other	\$ 25,572
Total	\$204,579

Partners

International Conference of Building Officials
Nevada Power

Transferability

Data collected in the Las Vegas/Clark County region can be used in Arizona as many of the large production builders operate in both markets. The data can also be used in further studies to determine the effects of market transformation in states or regions that have adopted energy codes. The Southern Nevada data will also provide insight into residential construction practices in hot, arid climates and can be reviewed to prepare code changes to the IECC to address cooling issues.

The training materials that will be developed will be useful for other states' training enforcement personnel on how to plan review and inspect for energy code compliance.

Background

The New Hampshire Residential/Small Commercial Energy Code was adopted in September 1998 and became effective February 1999. It is essentially an adaptation of the 1995 Model Energy Code (MEC). New Hampshire also has the Commercial and Industrial Energy Code for Buildings over 4,000 Square Feet, which is consistent with ASHRAE/IESNA 90.1-1989 and became effective in July 1993.

Purpose

The goals of the project are to promote awareness of the benefits of building energy codes, work collaboratively with stakeholders to foster advanced building energy practices that meet or exceed code, and encourage comparable energy code requirements throughout the region.

Project Description

New Hampshire proposes to do the following:

- Develop an advanced residential code training program that focuses especially on insulation, air sealing, ventilation, heating systems, indoor air quality, and moisture (control). Six to eight training sessions will be delivered to builders, construction subcontractors, code officials, and Weatherization Program contractors.
- Produce and distribute a two-hour video tape series on residential energy codes and applications to air a minimum of twenty times around the state.
- Develop on-line availability of energy assessment tools and technical assistance (MECcheck and COMcheck software applications).
- Conduct an analysis of non-compliance and uneven code compliance and explore with key stakeholders various options to improve current building practices relative to the existing code, as well as potential upgrades to the existing code.
- Provide up to three training sessions to building design professionals and code officials on the New Hampshire commercial and industrial energy code and advanced building energy practices and technologies.

Cost Data

Federal	\$175,000
Applicant	\$ 82,000
Total	\$257,000

Partners

New Hampshire American Institute of Architects

Background

New Mexico enforces the 1986 Model Energy Code (MEC) for commercial buildings and the 1992 MEC for residential buildings. This project is to adopt and implement the 1998 International Energy Conservation Code (IECC).

Purpose

The goal of the project is to update the New Mexico energy code and improve the quality of construction.

Project Description

New Mexico proposes to do the following:

- Form a collaborative to address energy code adoption and quality of construction.
- Develop compliance procedures for the 1998 IECC based on results of the collaborative review.
- Conduct training for small contractors, large contractors, architects, engineers, and building officials.
- Provide technical assistance to builders, architects, and engineers to enforce compliance.
- Develop illustrated compliance training materials. Training will focus on good building practices that improve the energy efficiency and comfort of buildings.
- Conduct training in nine cities and towns throughout the state.
- Develop a collaborative of builders, architects, engineers, code officials, suppliers, and building operators to implement and enforce the commercial energy code.

Cost Data

Federal	\$120,000
Applicant	\$ 79,625
Total	\$199,625

Transferability

Any important results will be reported to other states during the annual DOE energy code conference.

Background

The New York Department of State has committed to update the entire New York Building Code to a model-based code. The plans are to update the current New York State Energy Conservation Construction Code to the 2000 International Energy Conservation Code (IECC). A 2000 code committee has been established and will provide recommendations to the Building Codes Council by Fall 2000, with the intention to initiate rulemaking and formal adoption in early 2001 with phased-in implementation to follow.

Purpose

The purpose of the project is to assess current practice, determine where training is most needed, expand the sphere of influence within the construction marketplace well beyond code enforcement officials, develop specific training tools, and shape the improvement of market transformation programs that advance above-code practices.

Project Description

This project will:

- Conduct an evaluation of current commercial building practice. A survey will be targeted to a minimum of 200 architects and engineers and 100 building owners.
- Obtain a review of building plans and specifications to determine specific design requirements and specifications for projects completed in New York over the past two years.
- Visit local builders across the state to determine local building standards, identify areas where the current code is exceeded or not met, and identify the needs of builders in understanding and complying with the code.
- Determine baseline commercial and residential construction practices based upon information gathered in this project, a review of over 50 projects participating in NYSERDA's new construction program, and by interviews with major product manufacturers and vendors.
- Determine how to further advance above-code

and green buildings strategies in New York.

- Develop training tools for a phased education on the 2000 IECC platform.
- Integrate evaluation findings into the enhancement of the current SBC-funded New Construction Program.
- Continue to identify methods to reach industry to advance energy efficiency.

Cost Data

Federal	\$250,000
Applicant	\$168,450
Total	\$418,450

Partners

New York State Energy Research and Development Authority (NYSERDA)
New York State Builders Association
Northeast Energy Efficiency Partnership
Industry Representatives
Building Owners and Managers (BOMA) Chapters

Background

Oregon has a mandatory state-developed residential and commercial energy code which exceeds the 1995 Model Energy Code (MEC) and ASHRAE/IESNA 90.1-1989. Building technologies, products, designs, and practices continue to evolve in Oregon.

Purpose

The following are project goals:

- Evaluation and mitigation of energy impacts resulting from higher ventilation rates recently adopted in non-residential building code
- Improved glazing design for non-residential buildings while prescriptive code compliance is maintained
- Adoption of effective duct sealing standards in Oregon building code

Project Description

Oregon proposes to do the following:

- Mitigate impact of non-residential ventilation rates by evaluating the energy demands imposed by the increased ventilation rates, identifying ways to reduce excessive energy use, and recommending improved methods for meeting ventilation requirements in the code.
- Non-residential glazing improvements by identifying optimal glazing configurations and building code changes that allow them to be used, producing a Glazing Resource Guide, and holding a series of workshops to educate design professionals about incorporating energy-efficient glazing in project design.

- Identify successful duct sealing standards and promote their adoption in Oregon's building code.

Cost Data

Federal	\$200,000
Applicant	\$ 67,500
Total	\$267,500

Partners

Northwest Energy Efficiency Alliance
Oregon Building Codes Division and Building Codes Structures Board
Oregon Building Officials Association and code jurisdictions
Design professionals, builders, and contractors

Transferability

Oregon's experience with identifying, adopting and implementing energy code upgrades will help determine which approaches work, and those that do can be incorporated into other states' codes and national codes.

Pennsylvania

Implementation of State Building Codes

Background

Prior to 1999, most regulation of new buildings within the Commonwealth of Pennsylvania was handled at the local level. Energy conservation was covered by Act 222, a state-developed code based on ASHRAE 90A-80 and ASHRAE 90B-75. Enforcement of Act 222 was at the discretion of local governments. Since the state's energy office was disbanded in 1994, no statewide mechanism existed to monitor training or compliance. No certification of code officials was required by the state.

In November of 1999, the Commonwealth of Pennsylvania enacted Act 45, establishing the most recent BOCA National Building Code, or its successor as a mandatory statewide code for all new buildings. In complying with this law, the Commonwealth intends to implement the 2000 International Building Code including the 2000 International Energy Conservation Code (IECC). Final regulations are intended to be published in late 2000 to take effect in early 2001.

Purpose

The goal of this project is to develop and administer an extensive training plan for the 2000 IECC.

Project Description

Pennsylvania proposes to do the following:

- Develop and administer a detailed training plan-including curriculum, training material needs, number of people to be trained, timing/scheduling, and identification of training resources for each target audience.
- Identify and/or develop curricula and training materials to effectively implement the IECC.
- Train state and local government code officials and their supervisors.

- Select training contractors and schedule initial training sessions for local government code and other officials. There are 2600 separate governments within the Commonwealth.
- Train private code officials; there are an estimated 2000-3000 code officials, both public and private, within the Commonwealth.
- Train builders, subcontractors, designers, and architects.
- Add energy code inspections to the regulations. Language needs to be developed to include a requirement for on-site energy code compliance inspections.
- Increase public awareness of the code's requirements and benefits through informational brochures and a web site to address frequently asked questions.

Cost Data

Federal	\$300,000
State	\$100,000
Total	\$400,000

Transferability

Pennsylvania intends to be the first state to fully implement, without modification, the 2000 IECC. Thus, its experiences should serve as a useful guide for other states to follow. The Commonwealth intends to share its implementation and training experiences widely with other states at national and regional conferences.

The Commonwealth also plans to make basic building science and beyond code training an integral part of the overall education efforts. This should serve as a model to other states to follow in avoiding some of the technical problems that have sometimes resulted from improper implementation of energy efficiency measures.

Rhode Island

Northeast Regional Building Codes Project

Background

The regional project was developed in 1998 as a logical outgrowth of the Multi-State Commercial Code Working Group, which included, among others, three Northeast states (i.e., Massachusetts, Vermont, and Rhode Island). DOE has provided funding for various activities since 1997.

Purpose

The goal of the Northeast Regional Building Energy Codes Project is to increase energy efficiency and emissions reductions in the Northeast region by improving the effectiveness of state energy codes through regional coordination.

Project Description

Rhode Island and its partners propose to do the following:

- Provide assistance regarding commercial energy code requirements [including ASHRAE/IESNA 90.1-1999 and the 2000 International Energy Conservation Code (IECC)] and technical support tools to the design community in at least three Northeast states.
- Assess state and local energy code review, inspection, and enforcement activities in at least two Northeast states.
- Assist Northeast states to develop, adopt, and implement commercial building code requirements that address issues of indoor air quality as part of improving overall building energy performance.

Cost Data

Federal	\$150,000
Other	\$ 50,040
Total	\$200,040

Partners

Northeast Energy Efficiency Partnerships, Inc.
New Buildings Institute

Transferability

The Building Energy Codes Project Advisory Committee includes participation of Northeast states, gas and electric utilities, professional associations, and public interest groups concerned with building energy codes. The Committee meets several times a year to exchange information, plan projects to update codes and improve implementation including coordinated and joint projects, and identify resources to assist these efforts.

South Carolina

Evaluate Effectiveness of Commercial Energy Code

Background

South Carolina's section of the energy code for commercial buildings is based on ASHRAE/IESNA 90.1-1989. Starting on July 1, 2000, all jurisdictions have a year in which to adopt the International Codes as published by the International Codes Council. The South Carolina Energy Office has conducted over 30 Building Energy Code Training Workshops with funding assistance from DOE since 1995. It is now important to evaluate and measure the effectiveness of the way codes are implemented in South Carolina.

Purpose

The purpose of this project is to determine the effectiveness of the energy code in achieving energy savings in select building types in South Carolina.

Project Description

South Carolina proposes to do the following:

- Develop a detailed overview of the ASHRAE/IESNA 90.1-1989 code and its requirements and understand the "context" it has in the design process among South Carolina building design professionals.
- Identify jurisdictions in the three major urban areas in South Carolina (Greenville, Columbia/Lexington and Charleston) where the energy code is actively promoted as a part of the building process.
- Develop, with the assistance of building inspectors in these areas, a survey to determine the effectiveness of each of the components listed in the Compliance and Enforcement process of the code.
- Identify barriers to institutional effectiveness of the current code (based on surveys and interviews).

- Conduct a series of interviews with both building inspectors and architects/engineers to determine the assets and limitations towards the implementation of the code.
- Determine institutional barriers for implementation and prepare a series of recommendations to architects/engineers and building inspectors, that improve the effectiveness of energy consumption in South Carolina.

Cost Data

Federal	\$117,038
Applicant	\$ 42,846
Total	\$159,884

Partners

Clemson University, School of Architecture and the Department of Agriculture and Biological Engineering

Transferability

This project will develop a standardized format for evaluating code implementation that can be duplicated in other states. Short courses will also be developed to assist architects/engineers, builders, and building officials to improve the effectiveness of implementing the energy code.

Background

Utah currently requires all commercial buildings meet ASHRAE/IESNA 90.1-1989. This code requirement has been established by the Utah Building Code Commission. The Commission would like to evaluate ASHRAE/IESNA 90.1-1999 before adopting it.

Purpose

The purpose of this project is to familiarize the Commission with ASHRAE/IESNA 90.1-1999 and to instruct building inspectors in how to better enforce state energy code requirements.

Project Description

Utah proposes to do the following:

- Implement a new design program for four state-owned facilities providing design teams with guidance in energy-efficiency design strategies.
- Use the ASHRAE/IESNA 90.1-1999 Energy Cost Budget Method to determine success of the design teams.
- Verify savings following commissioning using a measurement and verification process.
- Hold workshops to familiarize code officials, building inspectors, architects, engineers, and designers with the proposed new energy code. Designers will be trained in strategies to meet and beat the energy code while code officials and inspectors will be trained in what building features and components to look for in determining energy code compliance.

Cost Data

Federal	\$ 80,000
Applicant	\$ 48,000
Total	\$128,000

Transferability

Lessons learned will be shared with the Utah Building Code Commission and various local, state, and national professional groups such as NASEO, ASHRAE, APEM, and ACEEE.

Background

Utah has adopted the 1995 Model Energy Code (MEC) which is mandatory statewide. There is an opportunity to work toward adoption of the 1998 International Energy Conservation Code (IECC) that includes performance testing for air and duct leakage, streamlined code compliance implementation, and providing a simple, ongoing, region-wide technical support base for code officials, builders, designers, and consumers.

project is structured to allow easy replication and expansion into regional code implementation activities in the west.

Purpose

The goals of this project are to improve energy code implementation through more one-on-one code compliance training and technical assistance to key industry partners throughout the state and to work toward upgrading the residential building energy code toward the level of the 1998 IECC.

Project Description

Utah proposes to do the following:

- Work toward adoption of the next generation of building energy codes.
- Improve code compliance through partnerships between code officials and the housing industry to provide joint training and technical assistance.
- Develop an ongoing regional technical support network for building code officials.

Cost Data

Federal	\$ 75,000
Applicant	\$ 25,000
Total	\$100,000

Transferability

The training materials and implementation strategies developed in this project will be immediately exportable to similar states. A regionalized building energy code technical assistance web site will also be developed. This project offers promise for expanded regional implementation of building standards that exceed the 1995 MEC due to the characteristics of the growing western housing market. Many of the builder companies associated with the project have divisions throughout the western U.S. The

Background

In January 2000, the Vermont legislature began deliberations on legislation which will enable the Vermont Departments of Labor and Industry and Public Service to establish statewide Commercial Building Energy Standards (CBES) in Vermont. The CBES enabling legislation (S.244) will authorize the state to adopt and implement the CBES through a duly authorized rulemaking process pursuant to the Vermont Administrative Procedures Act.

Purpose

The goal of this project is to build on the success of the CBES development work which was funded through a 1996 SEP Special Projects Codes and Standards Development grant and to enable the rulemaking and implementation work required to establish the CBES to begin immediately. The implementation of CBES will build on the successful implementation of the Residential Building Energy Standards (RBES) in Vermont. This project will fund implementation activities in two phases in order to adopt and implement the CBES in Vermont.

Project Description

Vermont proposes to do the following:

- Finalize the CBES rules including the technical requirements and Vermont amendments to the IECC/ASHRAE 90.1 model codes and will establish the administrative procedures associated with the adoption and implementation of the CBES. (Phase I)
- Develop compliance and training materials, provide technical workshops and conduct public outreach activities for the building design and construction community and other affected parties. (Phase II)

Cost Data

Federal	\$200,000
Applicant	\$115,000
Total	\$315,000

Partners

Vermont Energy Investment Corporation

Burlington Electric Department
Vermont Gas Systems

Transferability

Northeast states will be kept informed of Vermont's efforts through the Northeast Regional Building Energy Codes Project Advisory Committee. Vermont will also work with Northeast states, at their request, to assist in developing their own commercial energy codes from available models, and in formulating implementation strategies. All of the materials developed for code training and technical support in Vermont will be made available to other jurisdictions at their request.

Background

From 1991 to 1997, Washington implemented a comprehensive energy code program which included strategies for training, outreach, tools, and compliance monitoring. This approach resulted in an excellent level of residential energy and indoor air quality code compliance in Washington. However, building officials have commented that there is a great deal of employee turnover and estimate that 30 percent or more of their staff have not received detailed energy code enforcement training. Two specific areas of concern exist for code enforcement: duct sealing and tilt-up concrete construction.

Purpose

The goal of the project is to foster a highly energy-efficient new construction market by ensuring that energy code compliance tools are widely available, user friendly, cost-efficient to maintain and modify, and that they promote the construction of homes exceeding the requirements of the code.

Project Description

The project proposes to do the following:

- Implement a new method for energy code enforcement training and certification.
- Evaluate methods for implementing code provisions with regard to improved duct sealing. Identify and advocate wide implementation of the most successful strategies.
- Evaluate the best methods for insulating concrete tilt-up construction (with Oregon Office of Energy). Advocate insulation methods that are proved to work with this construction method.
- Advocate highly energy-efficient building practices through public speaking engagements, Washington State Building Code Council activities, and regional collaborations. Support and distribute existing energy-efficient building information and software.

Cost Data

Federal	\$150,000
Other	\$ 50,000
Total	\$200,000

Partners

Association of Washington Cities
Washington State Association of Building Officials
International Congress of Building Officials
Building Industry Association of Washington
Cheney, WA Building Department
Inland Northwest HVAC Association

Transferability

Washington will meet regularly with the Northwest Energy Efficiency Alliance, the state energy offices in Oregon and Idaho, and other interested parties to assess where regional collaborations could be of benefit. In particular, Washington will work closely with Oregon on the duct sealing and insulated tilt-up concrete wall tasks.

2000 Incentive Grant Matrix for Building Standards and Guidelines Program

State	State Contact	Telephone	Purpose
Alabama <i>(Residential Energy Codes and Efficiency Education)</i>	Russell Moore Science, Technology and Energy Division Alabama Department of Economic and Community Affairs PO Box 5690 Montgomery, AL 36103-5690	(334) 242-5294	To encourage local jurisdictions in the state to adopt the voluntary Residential Energy Code of Alabama (RECA) in their local building codes by educating local building departments in the benefits of RECA.
Arizona <i>(Teaching Energy Conservation Program)</i>	Jim Westberg Arizona Department of Commerce Energy Office 3800 N. Central Ave., Suite 1200 Phoenix, AZ 85012	(602) 280-1434	To conserve energy by successfully implementing the new International Energy Conservation Code and the locally-adopted Sustainable Energy Standard, where applicable.
Arkansas <i>(Developing a Performance Path to Code Compliance)</i>	Chris Benson Arkansas Energy Office Arkansas Department of Economic Development One State Capitol Mall Little Rock, AR 72201	(501) 682-8065	To provide greater levels of education and information for builders, code officials, and others in the building trades and to encourage a larger segment of the building community to meet or exceed the minimums of the Energy Code as well as to build a better performing building.
California <i>(Builder Energy Code Training Program)</i>	Eurlyne Geiszler California Energy Commission Grants and Loans Office 1516 Ninth Street, MS-1 Sacramento, CA 95814 Administration Contact: Karen Shimada	(916) 654-4052 (916) 654-4554	Development of additional programs and tools to further energy-efficient, quality construction; to develop a close partnership with utilities to provide much needed additional training sessions not only for builders but for building officials and architects; and to seek additional avenues to publicize the components, accomplishments and advantages of the training.
California <i>(Nonresidential Building Quality Assurance, Phase II)</i>	Tav Cummins California Energy Commission Grants and Loans Office 1516 Ninth Street, MS-1 Sacramento, CA 95814 Administration Contact: Karen Shimada	(916) 653-1598 (916) 654-4554	To improve the construction quality of new nonresidential buildings through building acceptance testing, diagnostics, and third-party verification.

**2000 Incentive Grant Matrix
for Building Standards and Guidelines Program**

State	State Contact	Telephone	Purpose
District of Columbia <i>(Development and Adoption of the 1998 IECC)</i>	Sharon Y. Cooke DC Energy Office 2000 14th Street NW, Suite 300 East Washington, DC 20009	(202) 673-6738	To expedite the adoption and implementation of the 1998 IECC by the District of Columbia within an 18-month period and provide training activities and impact forums to DC stakeholders to foster greater public understanding and gain public support for the new code.
Florida <i>(21st Century Building Code Compliance Tools)</i>	Alexander Mack Community Program Administrator Florida Energy Office, Dept. of Community Affairs 2555 Shumard Oak Boulevard Tallahassee, FL 32399-2100	(850) 488-2475	To develop software tools that can be continually and easily updated to conform to evolving energy efficiency standards such as ASHRAE/IESNA 90.1 and the IECC.
Hawaii <i>(Cooling Climates Model Energy Code)</i>	Maurice H. Kaya State of Hawaii Department of Business, Economic Development & Tourism, Energy, Resources & Technology Division P.O. Box 2359 Honolulu, HI 96804-2359	(808) 587-3812	To conduct research necessary to lead the way in improving building efficiency by bringing superior technologies to the fore.
Illinois <i>(Implementation of the 2000 IECC in the City of Chicago)</i>	Henry Kurth Illinois Department of Commerce & Community Affairs 325 West Adams, Suite 300 Springfield, IL 62704-1892	(217) 785-5222	To facilitate the acceptance and implementation of the 2000 IECC in the City of Chicago through outreach, training, and code enforcement.
Indiana <i>(Energy Code Training Program)</i>	Monica Cannaley Indiana Department of Commerce Energy Policy Division One North Capitol, Suite 700 Indianapolis, IN 46204-2288	(317) 232-8979	To ensure the successful adoption and implementation of an IECC-based energy code for Indiana, as well as moving neighboring states closer to IECC adoption through education.
Iowa <i>(Building Energy Code Enforcement through a Community-System Approach)</i>	Angela Chen Iowa Department of Natural Resources 502 East 9 th Street Des Moines, Iowa 50319	(515) 281-4736	To increase building energy code compliance in Iowa.

**2000 Incentive Grant Matrix
for Building Standards and Guidelines Program**

State	State Contact	Telephone	Purpose
Kansas	Jim Ploger SEP Program Manager Kansas Corporation Commission 1500 S.W. Arrowhead Road Topeka, KS 66604-4027	(785) 271-3349	To achieve actual energy performance of new commercial buildings constructed in Kansas equal to or greater than resulting from compliance with ASHRAE/IESNA 90.1-1989 and actual energy performance of new residential buildings constructed in Kansas equal to or greater than resulting from compliance with the MEC.
Louisiana	Wade Byrd Energy Section Louisiana Department of Natural Resources PO Box 44156 Baton Rouge, LA 70804-4156	(225) 342-3476	To continue a high level of support for mandatory Louisiana statewide commercial energy conservation code, continue efforts to encourage local adoption of the MEC, to measure in-field implementation and effectiveness of commercial and residential energy codes in Louisiana, and to develop standardized code implementation and effectiveness protocols that can be used nationally.
Maryland <i>(Development and Adoption)</i>	David Cronin Maryland Energy Administration 1623 Forest Drive, Suite 300 Annapolis, MD 21403	(410) 260-7543	To adopt through rulemaking the 2000 IECC and to develop a detailed training plan to ensure the updated energy code is properly implemented.
Minnesota <i>(Energy Code Advancement Project 2000)</i>	Bruce Nelson Building Science Specialist Minnesota Department of Public Service 121 7 th Place East, Suite 200 St. Paul, MN 55101-2145	(651) 297-2313	To conduct a two-year effort to perform several projects related to improving implementation of Minnesota's 2000 energy code.
Mississippi <i>(Adoption of Building Energy Codes)</i>	Wes Miller Energy Division Mississippi Department of Economic & Community Development PO Box 850 Jackson, MS 39205-0850	(601) 359-6606	To establish an energy efficiency standard for new construction statewide based on the IECC, or equivalent to the 1995 MEC and ASHRAE/IESNA 90.1 and to train local building code officials, builders and designers to comply with the energy code using simplified software compliance tools.
Nevada <i>(In-Field Residential Energy Code Compliance Assessment & Training)</i>	Dave McNeil Nevada State Energy Office 1050 East William Street, Suite 435 Carson City, NV 89701-3105	(775) 687-4909	To assess the rate of code compliance with the MEC in jurisdictions that have adopted the code, to increase energy code enforcement through education in the jurisdictions that have adopted a version of the MEC, and to assess current construction practice quality for residential occupancies as it relates to building energy codes.

2000 Incentive Grant Matrix for Building Standards and Guidelines Program

State	State Contact	Telephone	Purpose
New Hampshire	James P. Taylor, Grants Coordinator Governor's Office of Energy and Community Services 57 Regional Drive, Suite #3 Concord, NH 03301-8519	(603) 271-8009	To promote awareness of the benefits of building energy codes, work collaboratively with stakeholders to foster advanced building energy practices that meet or exceed code, and encourage comparable energy code requirements throughout the region.
New Mexico	Harold Trujillo Energy Conservation and Management Division New Mexico Energy, Minerals and Natural Resources Department PO Box 1948 Santa Fe, NM 87504	(505) 827-7826	To update the New Mexico energy code and improve the quality of construction.
New York <i>(Evaluation of Energy Code Opportunities for New York State)</i>	Mark Eggers New York State Energy Research and Development Authority Corporate Plaza West 286 Washington Avenue Extension Albany, NY 12203-6399	(518) 862-1090 ext.3308	To assess current practice, determine where training is most needed, expand the sphere of influence within the construction marketplace well beyond code enforcement officials, develop specific training tools, and shape the improvement of market transformation programs that advance above-code practices.
Oregon <i>(Oregon Progressive Codes & Standards)</i>	John Kaufmann Oregon Office of Energy Conservation Resources Division 625 Marion Street NE, Suite 1 Salem, OR 97301-3742	(503) 378-2856	To evaluate and mitigate energy impacts resulting from higher ventilation rates recently adopted in non-residential building code; improve glazing design for non-residential buildings while prescriptive code compliance is maintained; and adopt effective duct sealing standards in Oregon building code.
Pennsylvania <i>(Implementation of State Building Codes)</i>	David Althoff Pennsylvania Department of Environmental Protection Rachel Carson State Office Building PO Box 8772 Harrisburg, PA 17105-8772	(717) 705-0372	To develop and administer an extensive training plan for the 2000 IECC.
Rhode Island <i>(Northeast Regional Building Code Project)</i>	Janice McClanaghan Rhode Island State Energy Office 1 Capitol Hill Providence, RI 02908	(401) 222-3370	To increase energy efficiency and emissions reductions in the Northeast region by improving the effectiveness of state energy codes through regional coordination.

**2000 Incentive Grant Matrix
for Building Standards and Guidelines Program**

State	State Contact	Telephone	Purpose
South Carolina <i>(Evaluate Effectiveness of Commercial Energy Code)</i>	Janet Lockhart South Carolina State Energy Office 1201 Main Street, Suite 820 Columbia, SC 29201	(803) 737-8030	To determine the effectiveness of the energy code in achieving energy savings in select building types in South Carolina.
Utah <i>(Improve Compliance and Educational Training of MEC)</i>	Denise Beaudoin Utah Office of Energy Services 324 South State Street, Suite 500 Salt Lake City, UT 84111	(801) 538-8615	To improve energy code implementation through more one-on-one code compliance training and technical assistance to key industry partners throughout the state and to work toward upgrading the residential building energy code toward the level of the 1998 IECC.
Utah <i>(Design a Program in State-Owned Buildings)</i>	Denise Beaudoin Utah Office of Energy Services 324 South State Street, Suite 500 Salt Lake City, UT 84111	(801) 538-8615	To familiarize the Commission with ASHRAE/IESNA 90.1-1999 and to instruct building inspectors in how to better enforce state energy code requirements.
Vermont <i>(Adoption and Implementation Project)</i>	Randall Lloyd Vermont Department of Public Service 112 State Street, Drawer 20 Montpelier, VT 05620-2601	(802) 828-4020	To build on the success of the CBES development work which was funded through a 1996 SEP Special Projects Codes and Standards Development grant and to enable the rulemaking and implementation work required to establish the CBES to begin immediately.
Washington <i>(Adding Value to the Washington State Energy Code)</i>	Scott Wolf Washington State University Cooperative Extension Energy Program PO Box 43165 Olympia, WA 98504-3165	(360) 956-2136	To foster a highly energy-efficient new construction market by ensuring that energy code compliance tools are widely available, user friendly, cost-efficient to maintain and modify, and that they promote the construction of homes exceeding the requirements of the code.