



**SOUTHWEST ENERGY
EFFICIENCY PROJECT**

ENERGY CODE IMPLEMENTATION: A PLANNING GUIDE for BUILDING DEPARTMENTS



Purpose of this Guide

This guide is intended to help the building official and building department staff develop an implementation plan when their jurisdiction updates its building energy codes.

The implementation plan is a schedule that phases in new construction practices and building technologies to meet the requirements of the newer energy code. The new practices are incremental so as not to overwhelm the people involved, including building department staff, contractors, builders, architects and engineers.

The goal for compliance with new energy codes is for industry professionals to construct buildings, install materials, and perform diagnostic testing in a manner consistent with the requirements and manufacturer instructions.

This guide is based upon the 2009 **International Energy Conservation Code (IECC)**.

The guide was created by J. C. Martel, Buildings Program Associate at the Southwest Energy Efficiency Project (SWEEP), in collaboration with the International Code Council Colorado Chapter. Special thanks to Gil Rossmiller, Town of Parker; Shaunna Mozingo and Dan Weed, Colorado Code Consulting; and Jim Meyers, SWEEP.

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Why Create an Implementation Plan?



Energy codes have driven significant improvements in new construction practices, yielding efficiency gains of 30 percent or more over the past two code development cycles.

With newer codes, the building industry may not be familiar with correct installation and construction practices per manufacturer requirements, and distributors may not stock products that are required in the newer codes. Therefore, outdated practices may continue unless industry professionals are notified of the new energy codes and given time to transition to the new requirements.

Implementation plans provide a reasonable schedule for this transition and set expectations between the building department and industry professionals.

Plans contribute a clear and reasonable timeline for industry professionals and building department staff to comply with and enforce new procedures. This model is especially useful when a jurisdiction skips a code cycle or is new to enforcing energy codes.

Steps to Guide the Process:

The Town of Parker, Colorado, achieved high code compliance rates with an implementation plan that phased in the new requirements. Recognized nationally for its leadership in developing strong compliance with current 2012 IECC codes, Parker has followed these steps successfully:

1. Assess the jurisdiction.

Determine the current level of staff and industry expertise. Set benchmarks: Where are you now and where do you want to be?

2. Develop the plan.

Identify specific new code requirements that may be difficult to implement. Rank those and determine an appropriate implementation timeline for each requirement.

Understand how long it will take for each phase of implementation to become routine. Every jurisdiction is different, so each one should determine an appropriate implementation timeline that supports its unique circumstances.

3. Introduce the plan.

Note that an implementation plan does not necessarily need to be published. It can be a conceptual guide that management follows to guide their jurisdiction to better code compliance.

4. Evaluate the progress of your jurisdiction.

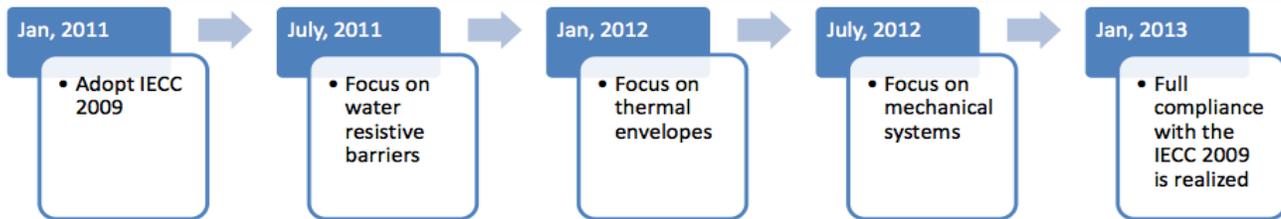
Move on to the next task when the new code requirement that you are working on has become routine.

5. Adjust the plan as needed.

The plan should remain flexible throughout the implementation process.

Example: Town of Castle Rock, Colorado

Phased Plan for 2009 IECC Compliance in New Homes



In this example, the building department recognizes 1) the need for education on heating and cooling equipment (duct and capacity sizing is probably the most complex to learn); and 2) building enclosure requirements that must be enforced before accurate load calculations can be made. The plan starts with building enclosure requirements followed by diagnostic testing and finally mechanical load sizing.

January 7, 2011: Adopt 2009 IECC.

Builders have a 6-month grace period. Permits submitted up to July 1, 2011, can meet the 2006 or 2009 code; after that, the plans must meet 2009 code. Submit Master Plans by March or April to provide adequate time for review.

July 1, 2011: All residential building permits must comply with the 2009 IECC.

New inspections on 2009 IECC include:

- Water resistive barrier: exterior of house
- Lath inspection under stucco/brick/stone
- Wall bracing: both interior and exterior

Inspectors focus on the water resistive barrier outside of the structure, including flashings and penetrations.

January 1, 2012: Focus on the thermal envelope.

Construction plans must indicate the location of the building's thermal envelope. Plans include air barrier details of IECC Chapter 4: proper insulation installation. Inspectors will focus on "cold-spots" like crawl spaces, furnace rooms and HVAC ducts in unconditioned spaces.

July 1, 2012: Focus is on mechanical systems.

Manual J, S & D must now be accompanied by an HVAC plan showing ductwork. Begin duct tightness test at rough inspection. All supply and return are now ducted.

January 1, 2013: Overall energy code compliance is achieved.

Probable time of adoption of 2012 IECC, requiring mechanical ventilation of the house (build tight and ventilate right).

Training



Training is part of an implementation plan.

The training schedule should align with enforcement dates for each code requirement and may extend throughout the three-year code cycle.

The most successful and effective training occurs when industry stakeholders and building department staff attend trainings together and learn from one another. By having everyone together, tradespeople learn how to install products to the new code while inspectors learn what to look for in the field. Together, building department staff and industry professionals can master the challenges of updating work practices to new code requirements.

The energy code expert in the jurisdiction's building department can lead some training workshops and industry experts can lead others.

Contact national trade associations to find product and service specialists, manufacturers, distributors and wholesalers of building products. Often, these experts will provide free training.

In some states, building associations have a speaker's bureau where experts are listed, and these experts may provide training at no charge.

Resources

International Code Council, Colorado Chapter (CICCC) provides training, support and networking for code officials. www.coloradochapterICC.org

The Parker Story tells the 7-year implementation process that Gil Rossmiller, building official in the Town of Parker, used to help industry and staff understand and comply with new energy codes. <http://media.iccsafe.org/geo/docs/parker.pdf>

Building Codes Assistance Project (BCAP) BCAP helps with planning, education, and technical assistance. www.energycodesocean.org/compliance-planning-assistance-program

CO Energy Code Support Partnership (ECSP) ECSP's toolkit helps building departments with national energy codes from adoption through enforcement. www.colorado.gov/energycodes

Building Energy Codes Program (BECP) provides information, resources, expert technical assistance and training. www.energycodes.gov/resource-center

Southwest Energy Efficiency Project (SWEEP) SWEEP promotes energy efficiency policies and programs in the southwest. www.swenergy.org