



U.S. Department of Energy  
Energy Efficiency and Renewable Energy



Building Energy Codes

# Codes 101 Understanding Building Energy Codes and Standards

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# Why Building Energy Codes & Standards

**National Level Impacts**  
**Security**  
**Environment**  
**Consumption of Energy**

**Market Level Impacts**  
**Capital Costs**  
**Paybacks**  
**Consumer Protection**



# Codes, Standards, and Model Codes

## ➤ Code

- Specify how the building **must** be constructed
- Example: State Specific Code (GA)

## ➤ Standard

- Describe how the building **should** be constructed
- Example: ASHRAE

## ➤ Model Code

- A general code that may be adopted by state or local jurisdictions
- Often modified to reflect regional needs and practice
- Example: IECC



# Energy Codes & Standards

## ➤ Residential

- Building Envelope
- Mechanical
- Service Water Heating
- Electrical Power & Lighting



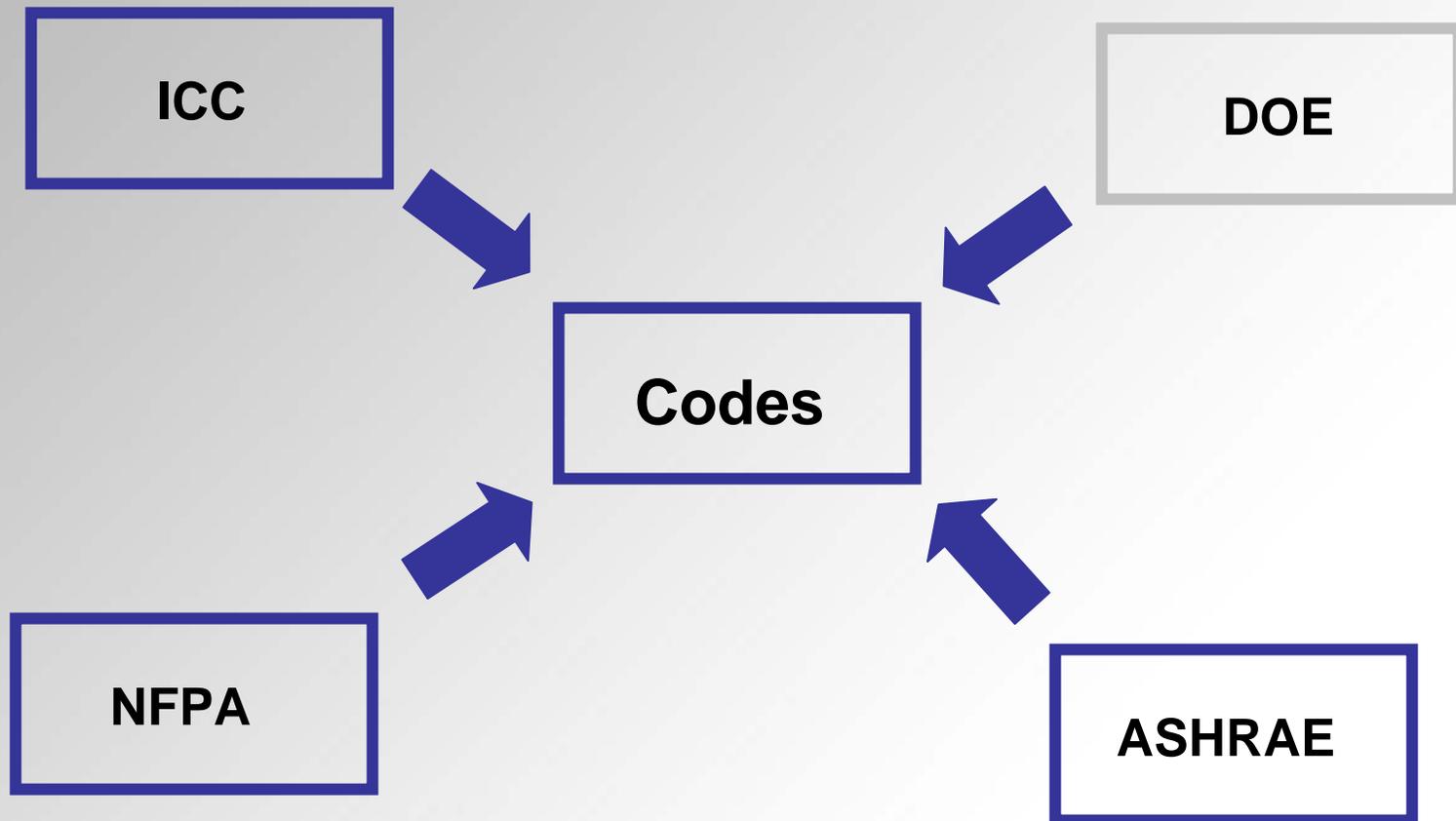
## ➤ Commercial

- Building Envelope
- Lighting
- Mechanical
- Service Water Heating



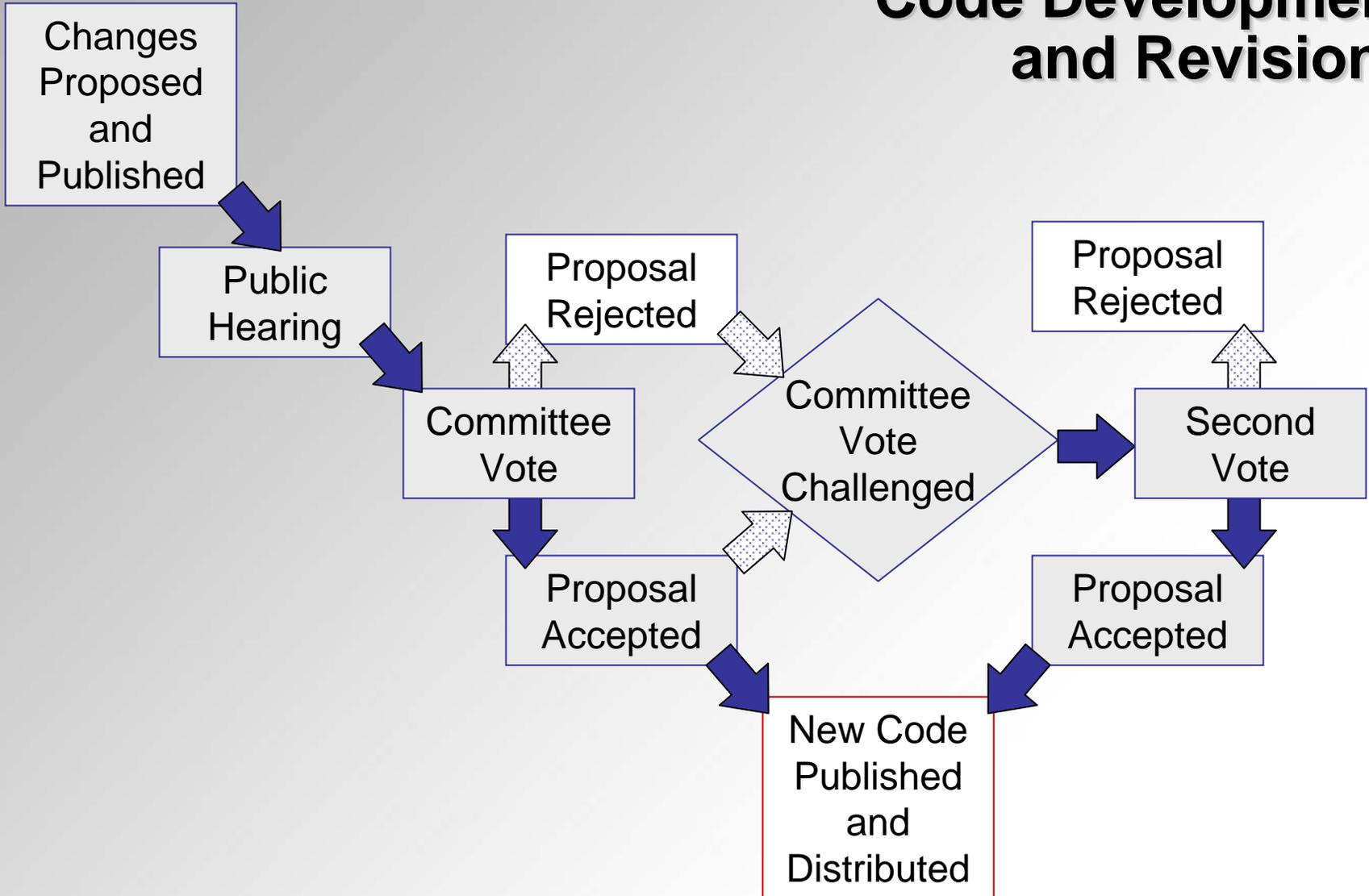


# Major Players





# Code Development and Revisions

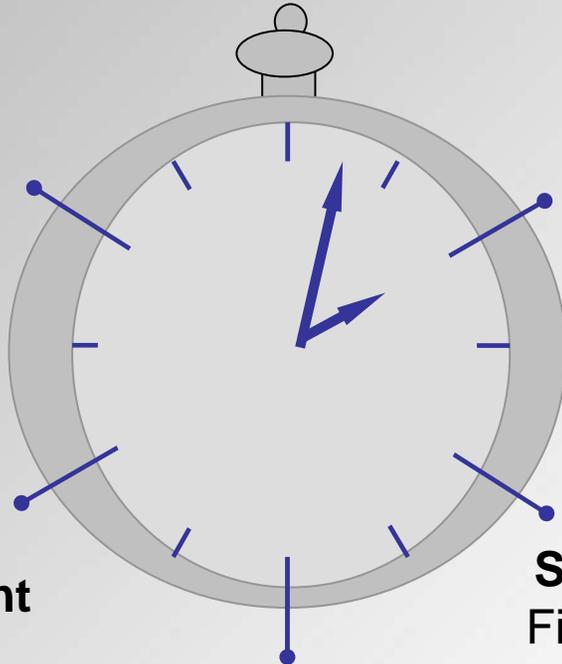




# Current Code Development Cycle

**August 2004**  
Code changes  
submitted to IECC

**February 2005**  
Code development  
hearings



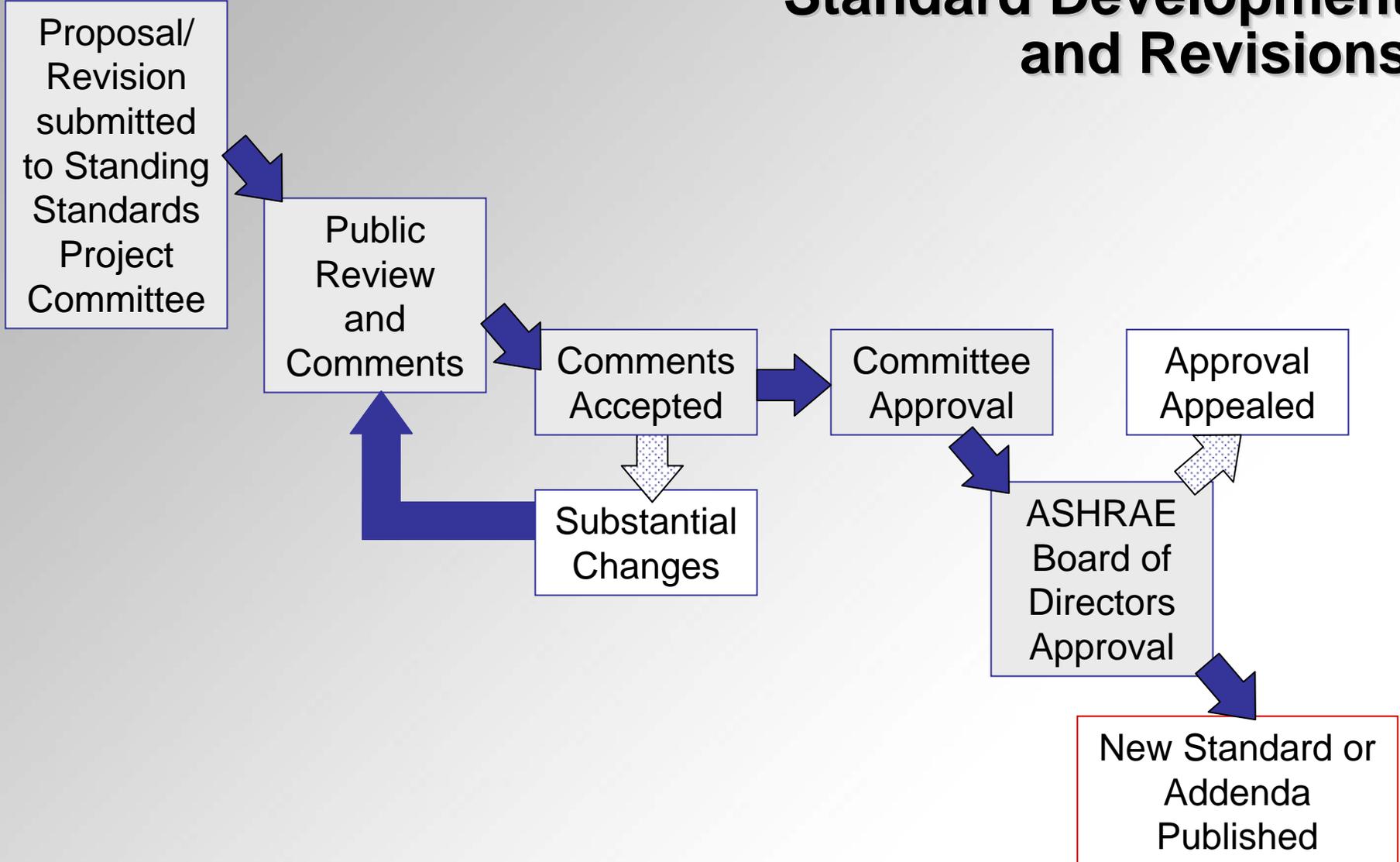
**June 2005**  
Deadline for public  
comments

**September 2005**  
Final action public  
hearings

- Involves:
- Code officials
  - Industry
  - Builders
  - Advocacy Groups
  - Designers
  - DOE

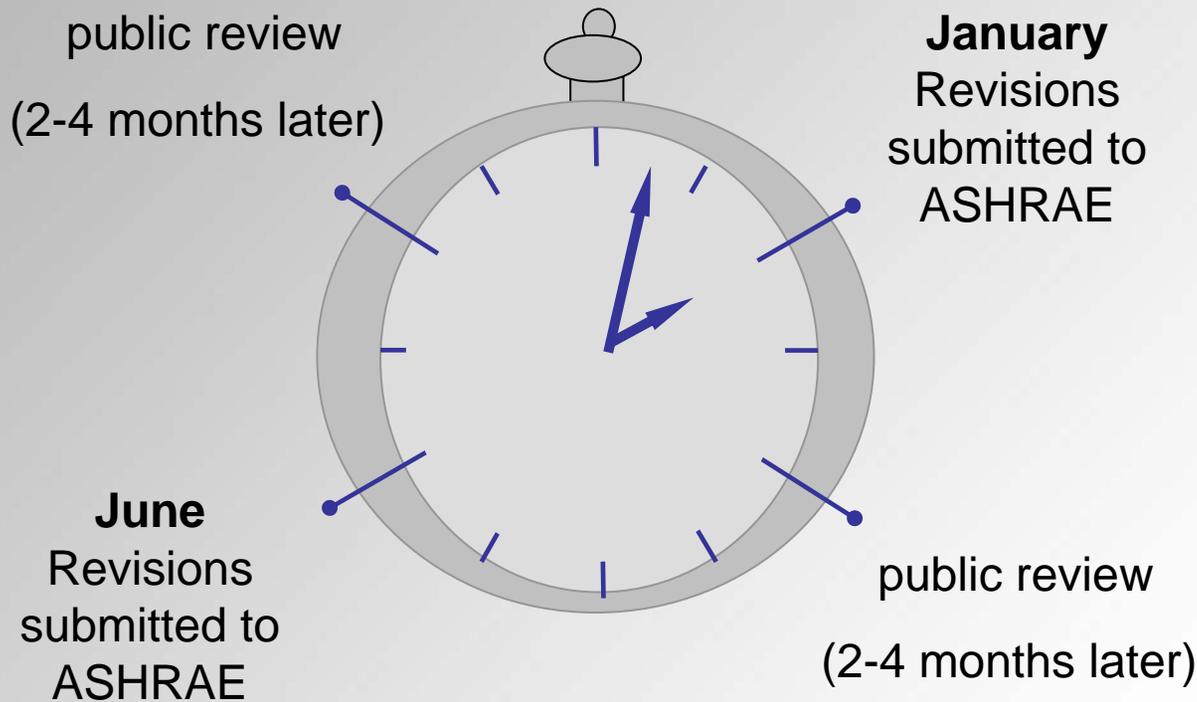


# Standard Development and Revisions





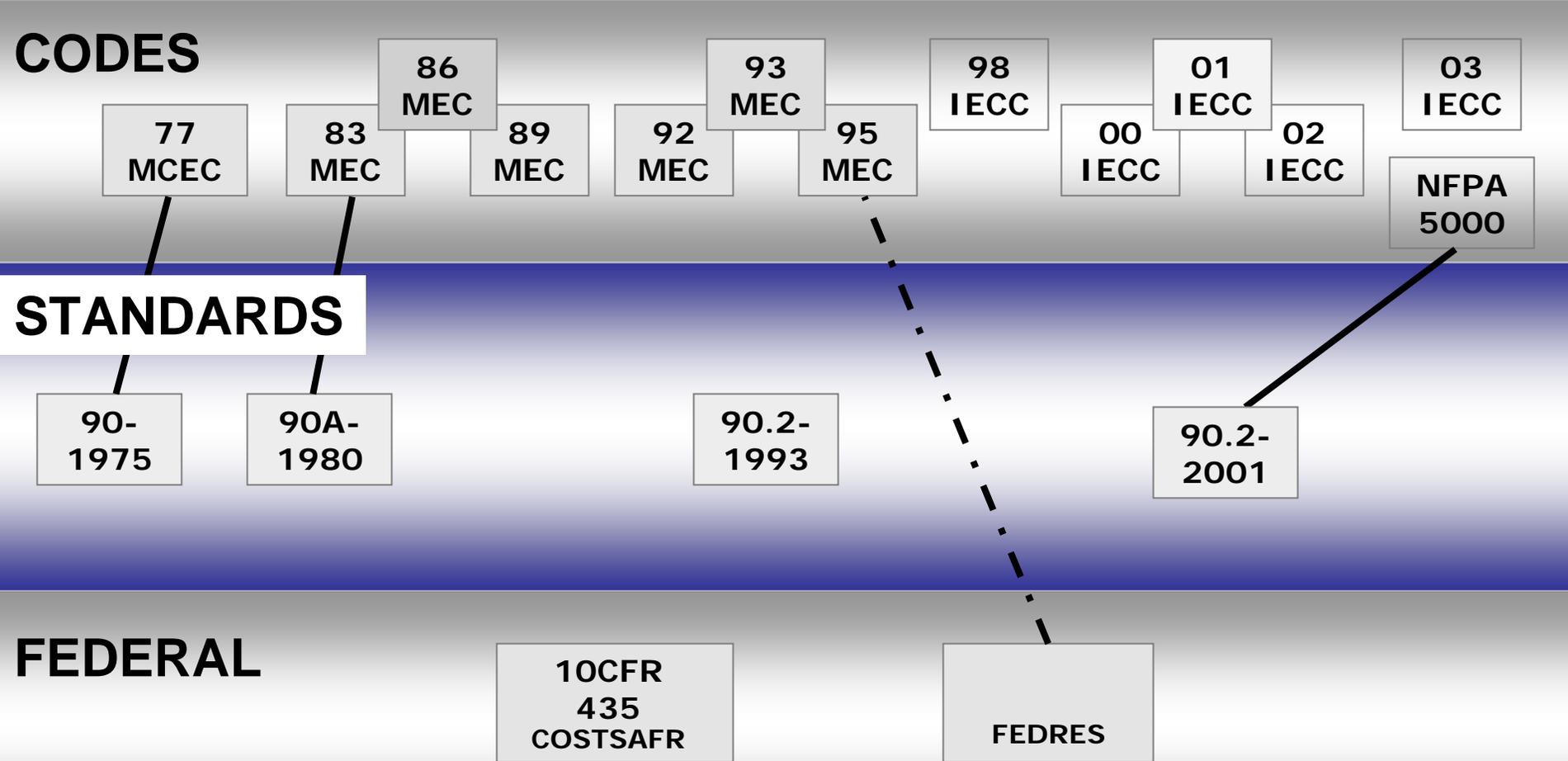
# Standard Development Cycle



- Involves:
- ARI, ASTM, IESNA
  - NFPA
  - Industry
  - Builders
  - Advocacy Groups
  - Code Officials
  - Designers
  - DOE

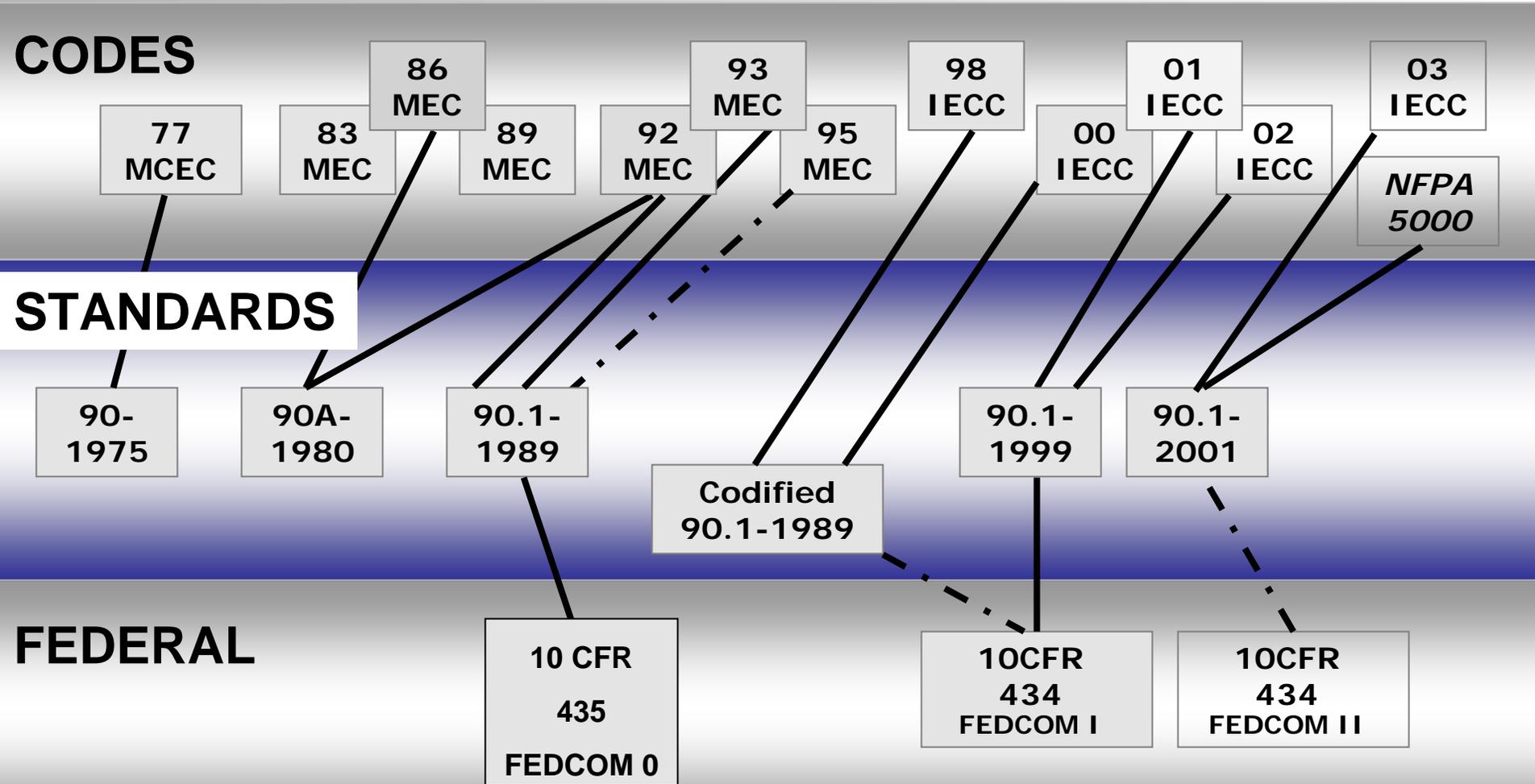


# Residential Codes and Standards





# Commercial Codes and Standards



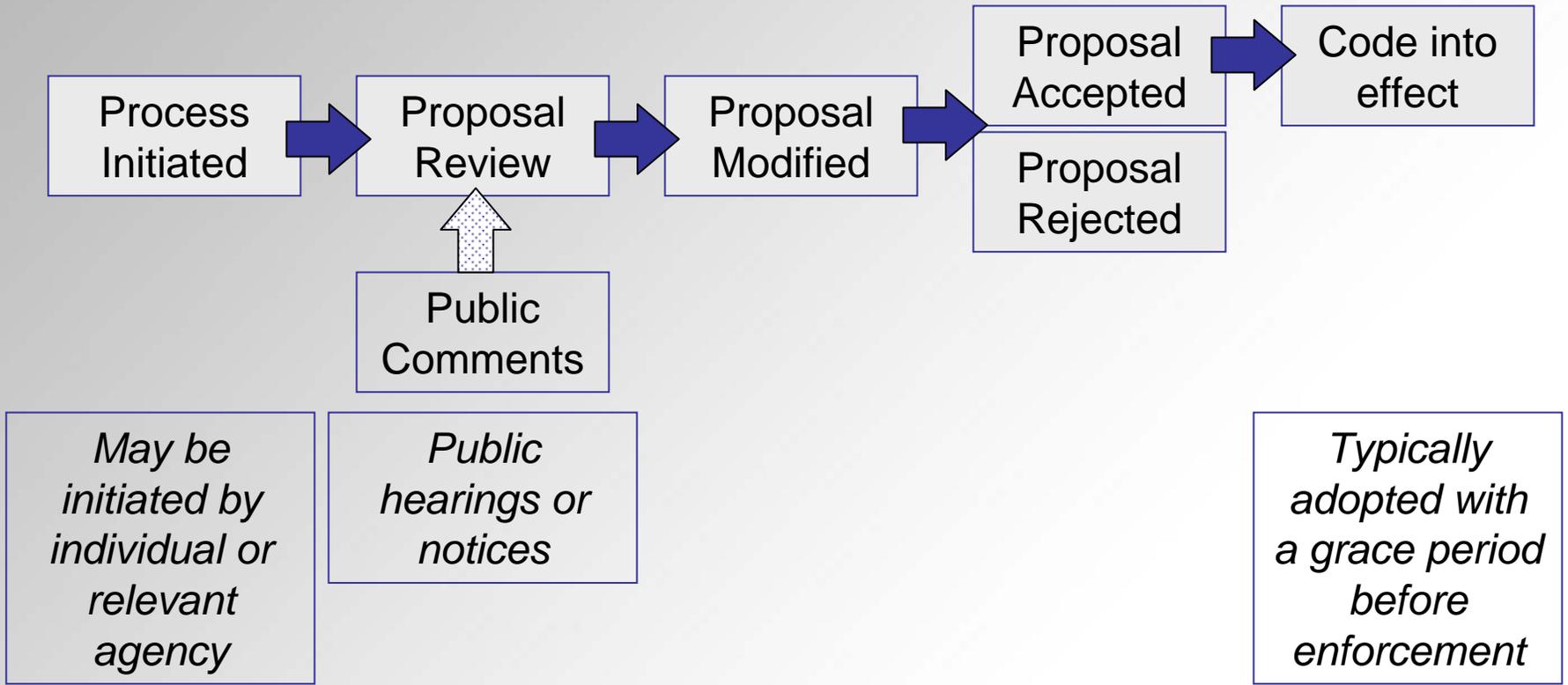


# Standards and Model Codes

| Title                                                                                                | Type              | Description                                                                                 | Common Versions                     |
|------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------|-------------------------------------|
| International Energy Conservation Code (IECC)                                                        | Model Energy Code | Applies to residential and commercial buildings. Written in mandatory, enforceable language | 1998 IECC<br>2000 IECC<br>2003 IECC |
| ASHRAE Standard 90.1: Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings | Energy Standard   | Applies to all buildings except residential buildings with three stories or less.           | 90.1-1989<br>90.1-1999<br>90.1-2001 |
| ASHRAE Standard 90.2 Energy-Efficient Design of New Low-rise Residential Buildings                   | Energy Standard   | Applies to residential buildings with three stories or less.                                | 90.2-1993<br>90.2-2001              |
| National Fire Protection Agency Code (NFPA 5000)                                                     | Model Energy Code | Applies to residential and commercial buildings.                                            | NFPA 5000                           |



# Code Adoption at State and Local Levels





# Implementation of Energy Codes at State and Local Level

## Communication is KEY!!!







## Code Enforcement

- Codes may be enforced at the state, local or jurisdiction level
  - Enforcement is often done with limited resources
- Voluntary Energy-Efficiency Programs may assist code enforcement
  - Home Energy Rating Systems (HERS)
  - Energy Star
  - Utility and Government Programs (LEED and Good Cents)



## DOE's Support

- Provide financial and technical assistance to adopt, implement and enforce
- Participate in the development of codes and standards
- Provide information and resources, compliance products, training and energy code related news



# Energy Code Resources

- BECP Website
  - [www.energycodes.gov](http://www.energycodes.gov)
- ICC Website
  - [www.intlcode.org](http://www.intlcode.org)
- ASHRAE Website
  - [www.ashrae.org](http://www.ashrae.org)
- NFPA Website
  - [www.nfpa.org](http://www.nfpa.org)

