Standards in the States

by David Karmol

Introduction

State and local governments are significant users of standards in two main areas, much like the Federal government. Federal agencies such as the Department of Defense use standards and codes for everything from weapons systems, equipment to vehicle parts, while the Department of State employs standards and codes to assure safe and usable embassy and consulate buildings around the world. In similar fashion, states use standards for procurement and construction and management of vast systems of buildings and infrastructure. In most of the procurement cases, they do not "adopt" standards in the sense that the standards become part of legal requirements, but the standards are used as contractual or specification standards which must be met by contractors, suppliers, and others who do business with the state or local government.

The other significant area of standards use is in the building and construction arena, where almost all requirements of construction and development of land are local and state regulations and laws, since most Federal power derives from the commerce clause in the US Constitution, and buildings are one of the few things that do not "move" in interstate commerce. Land and building development and construction fall almost completely into the category of regulation that is nearly exclusively state and local in nature. The Federal government, and its agencies, generally impose regulations on building construction only where financing for buildings is insured by Federal programs, such as the VA or FHA. States regulate land use and construction very differently, with some enacting state laws that set minimums, maximums, or both that have effect statewide, while others leave the decision as to whether and how to regulate largely to local governments, either to cities, counties or both.

Code Development

In the land and construction arena, most local governments adopt the building codes published by the International Code Council (ICC). Despite the name, ICC is actually an organization that was formed by the merger of three regional code organizations in the United States: in the south, the Southern Building Code Congress International (SBCCI); in the Midwest and East, the Building Officials and Code Administrators International (BOCA); and in the West, the International Conference of Building Officials (ICBO). After cooperating on several joint ventures in the 1990's, including the 1992 Model Energy Code that later became the *International Energy Conservation Code*© (IECC), the three groups began a consolidation that resulted in the incorporation of ICC as the successor organization to the regional groups in 1994. The publication of the first I-Code, the International Plumbing Code, occurred in 1995 and was followed by the International Building Code and International Residential Code in 2000.

To understand why the I-codes dominate the code landscape in the United States, it is important to understand how the codes are developed, and who participates in that process. As mentioned, ICC was created as a merger of three regional code organizations—SBCCI, BOCA, and ICBO. These three organizations, while independent and different in their cultures, had each developed a similar system to develop codes for their regions, which grew organically from area and regional associations of code officials and local government leaders, who came to see that the expense of keeping codes current with evolving building, fire protection, plumbing, and mechanical systems could be kept down by jointly working on the updating process. So code officials would form committees addressing specific subject areas of the codes, and accept proposed changes from code officials within the regional groups. These would be organized into hearings on a three year basis, and each group developed its protocols for how many code officials and how many industry experts would serve on each committee, as well as a process for those committees to review and vote on proposed changes, culminating in a final vote of all the code officials within the region at a single end of cycle "final action code hearing." So, unlike the ANSI-style process, where there are procedural requirements to assure that committees and votes represent a balance of one third each for users, producers and regulators, ICC achieves balance by requiring other stakeholders on its development committees, including manufacturers, users, and a range of industry participants. The ICC code development process evolved from a system where juris-

dictions with authority to adopt and revise codes joined together into first regional groups, and then the national group. The purpose of joining together was always to minimize the cost burden on individual jurisdictions for the expensive process required to manage hearings, coordinate different code provisions, and review changes to make sure that all elements of the code were coordinated, consistent, and not in conflict with other subject areas covered by the various code sections. Thus the code process was never seen as a process to be governed only by process requirements to insure exactly equal or balanced representation, but instead as a cost-effective means for the officials charged with the assuring the public of safe buildings to accomplish their governmental work in the most efficient and timely manner. Today, while the final vote on acceptance of changes to the codes is still limited to governmental members and honorary (usually retired governmental members) members of ICC, the process is very open, to the extent that there is never a charge or fee to propose a change, appear to testify, or otherwise attend or participate in code hearings. Manufacturers, distributors, regulators, builders, architects, engineers, state and Federal agencies, and a host of non-profit and for profit groups participate in code development, and have the right to vote on proposed changes at critical stages of the process, where most decisions are made. While the code officials still have the only vote at the final stage, the majority of proposed changes have been either accepted or rejected at that stage, and only about thirty-five percent of the code changes heard at the Committee Action Hearings (CAH) go to the final "Public Comment Hearing (PCH)." The PCH decides issues where public comments or objections were received on actions taken by the CAH where diverse committees consider and vote on code change proposals. At the CAH, if there is a challenge to the committee vote, and an "Assembly Motion" made by an ICC member present at the CAH, then all ICC members can vote on that motion. A successful vote on such a motion becomes an automatic public comment to be considered at the final PCH.

This history also largely explains why, following the creation of ICC and the publication of the first I-codes, that the I-codes quickly became the dominant codes across the United States. To state and local code officials, who had long been involved in the SBCCI, BOCA, and ICBO regional code groups, none of which were ANSI accredited, there was no need for the sanction or approval of an outside organization, so long as the codes were largely the product of the work of fellow code officials who they knew personally and respected. And the ICC process, as was the case in the regional groups, left the final vote on adoption or rejection of changes to the codes in the hands of the governmental members—the very same code officials, inspectors, and fire safety officials who were charged by their governmental employers with insuring safe buildings. As the codes became more widely and universally adopted, they saw that there was a risk in allowing more active participation and voting power to manufacturers and other interests, who might try to use the codes to require specific products or proprietary technologies in the codes as a short cut to achieving market penetration or dominance.

The latest evolution in the code adoption process is ICC's newly introduced cloud-based platform called cdpACCESS©, which allows any organization or individual to propose a code change online in collaboration with others they choose, or with any or all public participants. They can also participate in the hearings and votes in the ICC code development process. And best of all, this can all be done from their desktop or tablet computer. The process provides unprecedented transparency for the public to see the development of new code requirements. This new process was created to address the concern of local government that the cost of officials traveling to and attending weeklong code hearings, was becoming an expense that was preventing the participation of many code professionals. cdpACCESS is hosted on its own website, at https://cdpaccess.com

Through the I-codes, states adopt the standards referenced in the model codes (NFPA's National Electrical Code, fire sprinkler installation, and storm shelters; specifications for heating and air-conditioning systems and ducts, insulation, glass, wood and fastener products; seismic provisions, design, safety and structural minimum standards; tile installation, cement, specifications for manufacture and installation of gypsum, adhesives, steel drills, load bearing steel trusses, standards for test methods for heat and visible smoke release rates for materials, standards for stairs, elevators and walkways; and standards for asphalt roofing products, among hundreds of examples.) Currently there are over 1400 referenced standards in the I-codes.

The ICC has developed a very specialized and structured process to assure that standards proposed to be referenced within the I-codes meet either ANSI or ASTM process requirements or equivalent, since any referenced standards will have the same legal impact as code language in requiring compliance during the construction process. (ICC has an entire Council Policy (CP 28) devoted to describing the specific process for code development, including how third party standards may be referenced or incorporated.) Standards referenced refer to a specific version or date-denominated standard, never "the current version." There is now a specific timetable for SDOs to submit their newly revised standards, and a later deadline prior to the new code publication date, separate and apart from the code development process, for ICC to receive information on updated or newly revised standards. That timetable has been revised over time, to make sure that, to the maximum extent, the new code references the current version of the standard. SDOs must show that the revised standards meet all the same process and participation requirements as are required for initial referencing of the standard in the code. In all cases, the code references the SDO's published standard, or specifically designated parts of the standard, and with full respect for the SDO's copyright. In a few limited circumstances, the code does cite a reference standard, and then note specific changes to those requirements, or differences from the reference standard.

The Adoption Process

Almost all of these thousands of standards are adopted when the state or local government adopts the *International Building Code*© (regulating commercial buildings and multi-family residential structures), and the *International Residential Code*© (regulating one and two family dwellings and the related *International Plumbing Code*©, *International Mechanical Code*©, etc. While each state is different, and almost none are exactly the same as another, the state/local adoption process falls into a few category types:

(Continued on page 16)

(Continued from page 15)

- State adoption as a statewide requirement. There are around ten states that generally adopt the codes statewide, and every jurisdiction is required to enforce the code in the local jurisdictions. Virginia and Florida are examples, although Florida does have some more stringent requirements in coastal zones, subject to hurricanes. There are also a few states that have a statewide code that only applies to state buildings, but not to privately owned facilities.
- State adoption of a minimum code, with localities permitted to enact more stringent requirements. Massachusetts and Maryland are examples of this type of jurisdiction, although each has its own variation on this model.
- No statewide requirements, but local option to adopt codes at the county or city level. Missouri and Kansas are examples of this model.
- A mix of the above, including states with minimum and maximum code requirements, such as Texas, and some states with state codes that have exceptions for some jurisdictions within the state, like Illinois, with Chicago having its own code.

The simple truth is that there is no "dominant" or "typical" way to adopt building codes—each state does it slightly differently. This makes tracking the adoptions, and the modifications made to the adopted codes, with each state and many local governments on very different timelines and cycles of adoption, a daunting task, to say the least.

In addition to the variations in which level of government adopts, there are also differences in the adoption process. In some cases there is straight legislative enactments of a specific code directly into the statue or local ordinances. In others, authorizations are made to a body such as a state or local building code authority to hold hearings and adopt codes by regulatory action. There are also hybrid adoptions where a board of experts and/or stakeholders recommends a version of the model code, possibly with amendments, and a legislative body, or state or local executive, makes the final decision.

With respect to building and construction related standards, it is relatively simple to determine if a jurisdiction has adopted standards published by a given organization, if they are referenced within the I-codes. All referenced standards are listed, by name of the organization that is the standard developer in the last chapter of each of the codes. Referenced standards become mandatory requirements, with the force of law, in jurisdictions where the codes are adopted (assuming the provisions that reference the standards are not amended out of the adopted local code.)

ICC manages interactions with all of these states through a highly experienced staff of regional government relations (GR) professionals, many with backgrounds as code or construction professionals, who live and operate from regional offices covering all of the fifty states. Most of the ICC state GR staff cover from two to four states, with a few exceptions in the larger and more complex states such as California and Texas. Even with such a highly experienced staff, it is often difficult to track the hundreds of jurisdictions within each state, many of which are not required to report to the state or any other authority what code requirements they have adopted within their jurisdiction.

ICC is also fortunate to have good working relationships with many of the standards organizations whose standards are referenced within the codes, and thus have an interest in the adoption of current codes. Groups such as NFPA, NEMA, ACCA, AIA, ASHRAE, and others work closely with ICC, and often have their state and local representatives assist in advocating for adoption of the codes. In this way, they keep in touch with what is happening in all the states they are concerned with, even if they do not have representatives directly working in every state. ICC welcomes involvement in the Coalition for Current Safety Codes (http://www.coalition-4safety.org) by any organization whose standards or products are influenced or affected by code adoption, and shares information on current state and local activity with all coalition partners. While this coalition is national in nature, it is primarily a vehicle to coordinate local and state efforts to adopt current codes, as well as to provide accurate information to counter various emerging threats to the code process, such as efforts to mandate arbitrarily long periods between code adoptions. While ICC does not take any position on the schedule a state chooses to adopt new codes, it does object to arbitrary requirements to prohibit code adoption more frequently than every five or six years, which has been proposed in a few states. It is not so much the code developers that oppose extending the adoption cycle, and adopting new codes less frequently: it is the plain fact that technology, building materials and building systems are changing more rapidly than in the past, and manufacturers, designers, and architects depend on the code to review and approve these new systems, products, and materials. This is necessary to make sure that requirements are added to the codes to insure they are properly installed and incorporated into buildings in a way that provides for occupant safety, building integrity, and compatibility with other critical building components. As we have seen in recent natural disaster events, the consequences of inadequate codes can be catastrophic, and the resulting loss of life and property damage are simply unacceptable to the public. Arbitrarily extending adoption intervals, given the already lengthy process of getting new technology into the codes, and the standards referenced in the codes, runs contrary to the goal of mitigating disaster impacts, and increasing the resilience of new buildings. As an example, the ICC storm shelter standard (ICC-500, 2008) was first published by ICC in 2008, first introduced into the 2009 IBC as an option and in 2015 it is was included as a mandatory requirement for certain occupancies including education facilities.

While there is some competition among standards developers as to which standards are adopted, and among different code groups in certain sectors such as plumbing and fire codes, generally the competing groups are cordial and treat each other with respect, recognizing that the states and local governments have the final say in which codes or standards to adopt. They compete on the basis of the quality of their products, and the ancillary training and services they provide to support their respective documents. The fact that the local jurisdictions have the final say in adoption leads to competition that respects those local decisions, and competes on the basis of quality of documents, services and support after adoption, and training and certification services, which are increasingly important to the local and state entities.

The Myth of Free Standards

In recent years, there have been some efforts, largely instigated by a small group that insists standards should be "free" to all on the internet, to have states publish their

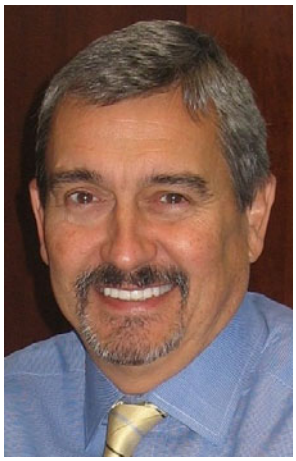
adopted codes and standards on the internet, and make them freely accessible and downloadable. In every case to date, the codes and standards bodies have successfully argued that making codes and standards "free" would destroy the system that currently allows every jurisdiction, particularly small ones, to access codes and standards that cost many millions of dollars to develop, update, and support with interpretations, training, and other back-office support. ICC, and all of its partners, and the developers of referenced codes, must continue to tell the story of how the system works, in the face of continual threats and challenges in this area. It is usually those least familiar with codes and standards, and how they come to be, that suggest removing the copyright protection of standards and codes. The most recent challenge has been in the State of North Carolina, where one state legislator, apparently upset when she was told that she would have to purchase a copy of the code that was being used to determine requirements for a construction project on property she owned, introduced legislation requiring the state to publish the code free on the internet. The legislation was not adopted in the last session for a number of reasons, one of which is that the publishing arrangement between ICC and the state allows the state to fund some of its building code activities, training, and enforcement from the sale of codes in the state. Eliminating the contract would not only damage the ability of ICC to continue to provide the code, it would also negatively affect the state's ability to enact and enforce a state code. Vigilance will be required to continue to push back against such efforts.

ICC, and all the major standards developers, as well as Federal agencies that have taken a position on the "free" standards controversy, have argued that the current system, where users (including the governments that adopt codes) pay part of the cost of development by purchasing the copyrighted code and standard documents, is the most sensible way to pay for the very high cost of keeping safety codes and standards current. Without publication revenues, the standards and codes system would be forced to develop a new funding mechanism, which inevitably would result in biases in the system, as those who could afford to pay would likely provide funding, and possibly introduce influences other than public safety and welfare into the process. The current system allows code officials to consider public safety first and foremost, without the need to be concerned with loss of funding based on code content. As with many products and services needed by the public for survival, like food, housing, and fuel, while free would be nice, it is not in the end possible to make a product with real costs "free" without shifting the cost of producing the needed goods or services to a different payer, with all the attendant problems that would create. In addition, ICC, as well as almost every major publisher of codes and standards, does provide "free" versions of their codes and standards, usually in the form of "read-only" versions, on their website or sometimes through a third-party provider site. All of ICC's standards and codes can be reviewed online, in a section of the www.iccsafe.org website labeled "free resources."

Conclusion

The development of codes based on voluntary consensus standards and with participation by all interested parties has been essential to providing a process in the United States that meets safety and public interest requirements in an effective and economic way in an environment of widely differing governmental processes.

David Karmol is currently the vice president for Regulatory Activity at the International Code Council. Mr. Karmol has served as General Counsel to two trade associations—one an accredited ANSI standards developer. He was the Vice President for Government Relations at ANSI and a two term member of the Ohio General Assembly representing a district in Toledo, Ohio. He can be reached at dkarmol@iccsafe.org.



Mikoski Appointed SES Vice President

The Board of Directors of SES – the Society for Standards Professionals has selected Edward Mikoski to be the new vice president of the Society, replacing Mary McKiel who resigned the post. Ed is vice president of Standards and Technology in the Washington, DC office of the Electronic Components Industry Association (ECIA). Since 2000, he has led the standards activities in several organizations, including the Electronic Industries Alliance (EIA), the Telecommunications Industry Association (TIA), and the Electronic Components Association (ECA). Ed received his undergraduate degree in Physics from Clark University in Worcester, MA, his MBA from Averett University in Danville, VA, and is a Certified Standards Professional (CStd).

Since 1985, Ed has held numerous leadership positions in trade associations and standards development organizations, including the US National Committee to the International Electrotechnical Commission (IEC). He received the EIA 1993 Engineering Award of Excellence and is a 2013 ANSI Meritorious Service Award recipient. He is a past president of SES, and a board member of the ANSI-ASQ National Accreditation Board (ANAB) and ANSI.