



Economic Impact Analysis Virginia Department of Planning and Budget

13 VAC 5-62 – Virginia Uniform Statewide Building Code Board of Housing and Community Development November 12, 2002

The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with Section 2.2-4007.G of the Administrative Process Act and Executive Order Number 21 (02). Section 2.2-4007.G requires that such economic impact analyses include, but need not be limited to, the projected number of businesses or other entities to whom the regulation would apply, the identity of any localities and types of businesses or other entities particularly affected, the projected number of persons and employment positions to be affected, the projected costs to affected businesses or entities to implement or comply with the regulation, and the impact on the use and value of private property. The analysis presented below represents DPB's best estimate of these economic impacts.

Summary of the Proposed Regulation

The General Assembly mandates in §36-98 of the Code of Virginia that the Virginia Board of Housing and Community Development adopt and promulgate a Uniform Statewide Building Code, which supersedes the building codes and regulations of counties, municipalities, and other political subdivisions and state agencies.

The proposed regulation (1) updates the referenced 1996 Building Officials and Code Administrators International, Inc (BOCA) construction model codes and standards to the 2000 editions of the International Code Council (ICC), (2) requires that when there is a change in fuel source when installing new equipment, the flue liner of the chimney be certified to the building official as safe to operate with the new fuel and equipment, (3) allows certain types of prefabricated buildings to be used as accessory structures on residential properties (such as storage sheds) to be placed on the ground without a foundation, (4) allows materials other than natural materials to be used as fill only when certified by a Registered Design Professional, (5) requires maintenance and testing of plumbing backflow prevention devices to be conducted

annually, (6) establishes minimum cooling requirements for owners or operators of apartment buildings that provide cooling, (7) requires that no more than five out of eight mentally or developmentally disabled persons living in a group home licensed by the Virginia Department of Mental Health, Mental Retardation and Substance Abuse Services or the Virginia Department of Social Services require physical assistance from the staff in order to respond to an emergency, (8) lowers the maximum riser height of a step for residential construction from 8 ¼” to 7 ¾”, (9) changes the conditions under which buildings are no longer required to have automatic sprinkler systems, (10) allows airports to have delayed egress locks, (11) allows doors that are means of egress in penal facilities and that are equipped with certain egress control devices to be locked under certain conditions, (12) shortens the time allowed for technical assistants hired to enforce the Uniform Statewide Building Code (USBC) to get certified in the appropriate subject area, (13) requires building officials notify the Department of Housing and Community Development (DHCD) within 60 days of the employment of assistants to enforce the USBC, (14) requires local officials identify any fire apparatus access road requirements prior to the issuance of a building permit, (15) establishes time limits for certain reviews and the issuance of approved building permits as they relate to new, detached one-and-two-family dwellings, (16) allows permit holders to request that reports of inspection reference the section of the building code that serves as the basis of the defect, and (17) allows localities to recoup the costs of emergency repairs from the owner of the property.

The proposed regulation also adds definitions, makes clarifications, including (1) that building officials notify the fire official or fire chief when any elective safety equipment, not required by the USBC, is installed, (2) that building officials and technical assistants hired to enforce the USBC will face sanctions as described in the Virginia Certification Standards when they fail to discharge their duties, (3) that the TRB can hear appeals regarding amusement devices, (4) that if existing structures and equipment were installed in accordance with state building regulations in force when the building was constructed, no alterations to structures or equipment will be required unless unsafe or unhealthy conditions exist.

Estimated Economic Impact

(1) The proposed regulation updates the referenced 1996 BOCA construction model codes and standards to the 2000 editions of the ICC. In 1994, the three major building safety

organizations (which determine building codes for 97% of U.S. cities, counties, and states), including BOCA, created ICC to develop a single set of comprehensive, coordinated model construction codes that could be used throughout the United States – the International Building Code (IBC). In determining the model codes and standards for the new IBC, 80-85% of the BOCA codes and standards were adopted by the ICC. Thus, the new model codes and standards are not expected to significantly alter construction activities in Virginia and the economic impact of updating the model codes and standards is not likely to be significant. The IBC has been adopted by 21 states including Maryland, Kentucky, and North Carolina and for military construction by the Department of Defense. Virginia has a number of design and construction firms that operate in the surrounding states. To the extent that the adoption of the new IBC increases consistency, certainty, and uniformity of building practices across states, it will have a net positive economic impact, lowering costs for firms that currently operate in other states, providing an incentive to other firms to extend their operations to other states, and encouraging more firms to locate themselves in Virginia.

(2) The proposed regulation requires that when there is a change in fuel source when installing new equipment, the flue liner of the chimney be certified to the building official as safe to operate with the new fuel and equipment. Changing the fuel source of furnaces, water heaters, and boilers could lead to corrosion and damage to chimneys that could result in chimney fires and poisoning through gases such as carbon monoxide being vented into the house. It would cost approximately \$75-\$100 (excluding the cost of any repairs that might be required) to have the chimney inspected and certified. The net economic impact would depend on whether the additional safety benefits outweigh the cost of certification. Since there is little data on injuries and deaths related to the malfunction of chimneys when the fuel source is changed, no specific estimate of the net economic impact of this change is possible at this time. That said, just a few cases of avoided death and injury would probably swamp the additional compliance cost.

(3) The proposed regulation allows certain types of prefabricated buildings to be used as accessory structures (such as storage sheds, playhouses, etc.) to be placed on residential property without a foundation. It will allow homeowners to place certain types of storage sheds and other similar structures on the property without having to excavate and pour a foundation. The regulation is likely to have little to no economic impact. Due to the difficulty involved in enforcing current policy, DHCD has not been enforcing the foundation requirement for

accessory structures on residential properties. Moreover, for most homeowners, insurance costs reflecting any additional safety concerns, would determine whether these structures are constructed with or without a foundation.

(4) The proposed regulation allows materials other than natural materials to be used as fill only when certified by a Registered Design Professional. This change applies to materials such as blast furnace slag that are used as fill in foundations and in the construction of roads. Non-organic fill materials such as blast furnace slag are susceptible to swelling when exposed to moisture, making roads and buildings unsafe and requiring expensive post-construction repairs. In order to ensure that the material does not expand with moisture, the proposed regulation now requires these types of materials be compacted to ensure it provides adequate uniform support and the compaction be certified by a design professional. The additional testing and certification would cost builders and owners between \$700 and \$800. The proposed change to the regulation seems unnecessary. In the case of damage or injury resulting from the improper use of fill material, private liability law appears adequate to handle the problem. Affected parties could litigate against the contractors and builders concerned to recoup damages. The potential increase in liability insurance costs would then determine whether contractors and builders choose to have fill material inspected and certified by a design professional.

(5) The proposed regulation requires annual maintenance and testing of reduced pressure principle backflow prevention devices in existing buildings. Backflow prevention devices stop the flow of contaminants from water outlets into the potable water supply. The backflow devices affected by the proposed change are predominantly found in commercial buildings and residential buildings with pools and sprinklers. According to DHCD, they are not aware of instances when the failure of these devices has led to the contamination of the water supply. However, the malfunction of these devices could lead to the waste of water. It would cost between \$50 and \$70 per hour to get the backflow devices inspected (and it could take from one hour for homes to up to 3-4 hours to inspect large facilities such as hospitals). Given the lack of any evidence that the failure of backflow devices has led to the contamination of the water supply, the proposed change seems unnecessary. Building owners and operators could choose to have these devices inspected depending on the cost of wasted water incurred by them when these devices fail and the cost of having the devices inspected.

(6) The proposed regulation establishes minimum cooling requirements for owners or operators of apartment buildings that provide cooling. It stipulates that if a landlord has signed a lease agreement agreeing to provide cooling, then the level of cooling has to meet certain minimum standards. The proposed change is not likely to have a significant economic impact. Localities can choose whether or not to adopt these standards as the proposed change falls under local option building maintenance regulations. If the localities choose not to adopt the minimum cooling standards, they will be no worse off than under current policy.

(7) The proposed regulation requires that no more than five out of eight mentally or developmentally disabled persons living in a group home licensed by the Virginia Department of Mental Health, Mental Retardation and Substance Abuse Services or the Virginia Department of Social Services require physical assistance from the staff in an emergency. The proposed change is not likely to have a significant economic impact. According to DHCD, the change reflects the current practice of local officials, the state fire marshal, and the Department of Social Services in the licensing and operation of group homes in the Commonwealth.

(8) The proposed regulation lowers the maximum riser height of a step in homes from 8 ¼" to 7 ¾" (the maximum height of a step in commercial buildings has been 7" for many years). The proposed change updates the International Residential Code to nationally recognized standards. With the maximum height of each step now ½" lower than before, an extra step would be required in most homes. According to the Virginia Association of Home Builders, the additional space required for the extra step would predominantly affect smaller houses that are 24'-26' wide (that do not necessarily have room to accommodate the additional space requirement without a significant change in design plans). The proposed change could potentially require such houses to have an additional depth of 2' (or between 48 and 52 square feet of additional construction) in order to accommodate the extra step. At \$80 per square foot, it would cost homeowners an additional \$3,840-\$4,160 or up to an additional 3.5% on a \$120,000 (1,500 square foot) home. The net economic impact would depend on whether the safety considerations of lowering the maximum height of a step are greater or less than the additional cost of making the change. Since there is little or no data on injuries and deaths prevented when steps are 8 ¼" high compared to when they are 7 ¾", the proposed change would be imposing a significant economic cost on home owners, while providing no clear additional benefit.

(9) Under current policy, buildings with a maximum of *12* dwellings and buildings that are not more than *three* stories high are not required to provide an automatic sprinkler system. The proposed regulation changes the requirement to buildings with a maximum of *16* dwellings and buildings that are not more than *two* stories high. The proposed change updates standards to nationally recognized levels. The change is not likely to have a significant net economic impact. It would apply only to new residential construction in Virginia. While some buildings (such as those three stories high) may now require automatic sprinklers, others (such as those with than 16 dwellings or less) will not (the additional cost of installing an automatic sprinkler system is approximately \$2 per square foot). Moreover, for most new residential construction, insurance costs are likely to determine whether an automatic sprinkler system is installed or not and updating standards to nationally recognized levels would probably not significantly alter current practice.

(10) The proposed regulation allows airports, under certain conditions, to install approved delayed egress locks on exits. The change was proposed specifically with regard to the recent increase in the perceived security threat at airports (especially Reagan and Dulles). For airports currently using security personnel to monitor exits, the net economic impact of allowing delayed egress doors would depend on the cost of installation compared to the cost of keeping security personnel posted at each exit. For airports not currently monitoring exits, the net economic impact would depend on the additional security provided by these doors and the cost incurred in installing them. Moreover, the increased security provided by delayed egress doors has to be weighed against the extent to which these doors could compromise the safety and the ability of people inside the airport to exit in emergencies.

(11) The proposed regulation allows exit doors in penal facilities with certain egress control devices to be locked in case of an emergency. The change was proposed by the Department of Corrections to prevent inmates from escaping when there is a loss of power or during other emergencies. The net economic impact of the proposed change would depend on the cost of installing egress control devices on exit doors, the potential improvement in security at penal facilities, and the compromise to inmate safety as a result of allowing the doors to be locked.

(12) The proposed regulation shortens the time within which technical assistants hired to enforce the USBC get certified from three years to one and a half years after appointment. Shortening the time required for technical assistants to get certified is likely to have a small positive economic impact. According to DHCD, one and a half years for technical assistants is adequate time for individuals to take the required core and technical modules and get certified and requiring this shorter time limit will not significantly increase compliance costs. To the extent that the change reduces the number of under-qualified individuals enforcing the USBC, the proposed change will have a net positive impact.

(13) The proposed regulation requires building officials notify the DHCD within 60 days of the employment of assistants to enforce the USBC. This change is not likely to have a significant economic impact. While it adds a small additional cost on localities of reporting the information, it allows DHCD to better enforce the time limit within which assistants need to be certified, potentially reducing the number of under-qualified assistants.

(14) The proposed regulation requires local officials to identify any fire apparatus access road requirements prior to the issuance of a building permit. Fire access road requirements are determined by the local ordinances. The proposed change will have a positive economic impact. It will impose a small additional cost on localities of identifying the fire access road requirements before construction begins. On the other hand, it will save builders the cost of undertaking expensive corrective measures to meet these local fire access road requirements once construction is completed or close to completion.

(15) The proposed regulation establishes time limits for certain reviews and the issuance of approved building permits as they relate to new, detached one-and-two-family dwellings: (i) an approved building permit has to be issued within 15 working days of the filing of an application, (ii) revisions made in response to rejection comments have to be reviewed within seven working days, and (iii) all other revisions have to be reviewed within 15 working days. The net economic impact would depend on the whether permits would be issued in a more timely and efficient manner, without compromising safety.

(16) The proposed regulation allows permit holders to request that reports of inspection reference the section of the building code that serves as the basis of the defect. The proposed change is likely to have a small positive economic impact. It would reduce the number of

arbitrary decisions and better allow permit holders to make necessary changes and revisions, at a small additional cost to localities.

(17) The proposed regulation allows localities to recoup the costs of emergency repairs from the owner of the property. The proposed change is likely to have net positive impact. It will save the localities the cost incurred in performing emergency repairs. It would also create an incentive for owners not to allow dangerous conditions to persist, potentially lowering the eventual cost of repairs.

Businesses and Entities Affected

The proposed regulation affects contractors, builders, design professionals, building owners and landlords, homeowners, local building officials, and technical assistants hired to enforce the USBC. The proposed regulation would also affect the operation of airports and penal facilities in Virginia.

Localities Particularly Affected

The proposed regulation affects localities throughout the Commonwealth.

Projected Impact on Employment

The impact of the proposed regulation on employment is unclear. Changes to the regulation such as requiring inspections of chimney flue liners and backflow prevention devices could increase the number of inspectors being certified to do such inspections. The change in egress door requirements in airports and penal facilities could potentially decrease employment in facilities where exits are currently being manned by security personnel. The shortening of the time limit for technical assistants to get certified could reduce the number of individuals employed or under contract to an enforcing agency to enforce the USBC. The establishment of time limits for the issuance and review of permits for new, detached one-and-two-family homes could increase the number of people hired by local building departments for the issuance and review of such permits. The ½” reduction in the maximum height of steps in residential buildings could raise costs and lower demand for housing, potentially reducing the number of people employed in the construction industry.

Effects on the Use and Value of Private Property

The proposed is likely to have a positive economic impact on the use and value of private property in Virginia. Adoption of the new IBC increases the consistency, certainty, and uniformity of building practices across states and could decrease costs for Virginia-based contractors, builders, and design professionals of doing business in other states. It could also encourage businesses to be set up and located in Virginia. The adoption of the new code could impose a small one-time cost on businesses of becoming familiar with the new codes and standards. The ½” reduction in the maximum height of steps in residential buildings could raise the cost of new and existing homes in Virginia.