



**ACT 47. LEGISLATIVE STUDY GROUP REPORT: AN ACT  
RELATING TO HOUSING OPPORTUNITIES MADE FOR  
EVERYONE**

**JANUARY 15, 2024**



**SUBMITTED BY: MICHAEL DESROCHERS, EXECUTIVE DIRECTOR  
DEPARTMENT OF PUBLIC SAFETY, DIVISION OF FIRE SAFETY**



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## Committee Members

**Michael Desrochers** - Executive Director, Division of Fire Safety, Department of Public Safety

**Landon Wheeler** - Springfield District Manager, Division of Fire Safety, Department of Public Safety

**Matt Musgrave** - Associated General Contractors of Vermont

**Chris Cochran** - Director Community Planning and Revitalization, Agency of Commerce and Community Development

**Joseph Aldsworth** - Barre City Deputy Fire Chief

**Matthew Stone** - Burlington City Fire Marshal

**Bob Duncan** - Duncan Wisniewski Architecture, Representing AIA (American Institute of Architects) Vermont

**Sandra Vitzthum** - Sandra Vitzthum Architect LLC, Representing AIA (American Institute of Architects) Vermont

**Pete Kelly** – Vice President Business Development, Dew Construction-Representing “commercial / multifamily housing.”

## Introduction and History

The Division of Fire Safety has statutory authority under (Title 20-Chapter 173) Prevention and Investigations of Fires. The Division of Fire Safety protects Vermonters and visitors from the catastrophic results of fire, explosions, carbon monoxide poisoning, hazardous material releases, structural collapse, and responses to natural disasters. Our responsibility is achieved through a multi-faceted approach, including adopting nationally recognized life safety and building codes, code enforcement, plan review, permitting, licensing, and certification of trade professionals and public education.

National safety standards have been developed and amended over decades. They are the direct result of investigating multiple fire fatalities (three or more deaths) and decades of investigating carbon monoxide deaths. The results of these fire investigations, including the study of human behavior in panic situations, contribute to code development. The codes and standards are amended and published every three years. Still, they are only effective once adopted by the authority having jurisdiction and are frequently amended by the jurisdictions.

**Fire Facts:** According to the National Fire Protection Association (NFPA), in 2022, there were 1,504,500 fires resulting in 3,790 civilian deaths and 13,250 injuries. In addition, there were 96 on-duty firefighter deaths. This fatal injury count is higher than in recent years and the highest since 2013 when 98 on-duty deaths were reported. One- and two-family home fires account for 59.1% of civilian deaths and 54.3% of injuries. Apartment structure fires account for 12.4% of deaths and 20.8% of injuries. Most of Vermont's fire fatalities are in residential occupancies.

In 2022, Vermont Fire Departments reported 59,344 individual emergency incidents using the National Fire Incident Reporting System (NFIRS). In 2022, with 74.2 % of the fire departments in Vermont participating in NFIRS reporting, fire departments respond to an average of 3,500 emergency calls per month. Historically, Vermont has had a disproportionately high per capita fire fatality rate. The continued work of fire safety officials, fire departments, trade professionals, architects, and other safety advocates, along with installing residential fire sprinklers and smoke alarms and compliance with safety standards, have all contributed to the overall reduction in fire deaths over time. Although national and state fire death rates have decreased overall, in the last few years, Vermont has experienced a slight increase in fire deaths. The age group of 40 – 64 now represents 38.2 % of fire deaths. However, the elderly and young children are still the most vulnerable populations. Older adults have a greater risk of fire death than the overall population. In the past five years, 2018-2022, 28% of Vermont's fire deaths have been seniors over 65. It is important to note between 2004 and 2016, Vermont did not experience a single child fatality. From 2017 to 2019, we experienced three child fatalities.

Residential fire fatalities and injuries are preventable. Having properly installed and maintained smoke and carbon monoxide alarms and knowing your escape is critical. We could prevent most of these tragedies if residential fire sprinkler systems and smoke alarms were installed and properly maintained.

## Executive Summary

In the 2022-2023 session, the Vermont Legislature passed Act 47, titled “**An act relating to housing opportunities made for everyone.**” Act 47’s Section 29, “**Vermont Fire and Building Safety Code; Potential Revision Report,**” directed the Executive Director of the Division of Fire Safety, Department of Public Safety, to examine provisions from other jurisdictions’ fire and life safety codes that would:

- facilitate increased construction of new residential units and assist in conversions of existing buildings into new residential units;
- incorporate the recommendations into the Vermont Fire and Building Safety Code if warranted;
- identify any legislative action that would be necessary to incorporate recommendations into the Vermont Fire and Building Safety Code.

In the context of this report, it should be noted that Act 47 also established an Energy Efficiency Study Committee tasked to write a report and make recommendations. This report has significant implications for the Division of Fire Safety, including new building code criteria and a recommendation to expand our authority.

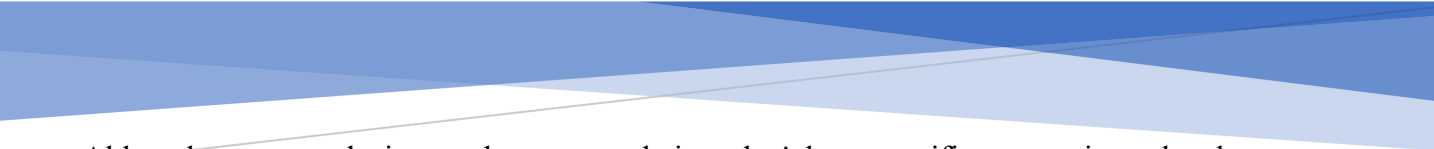
The division is currently in the process of reviewing the 2021 codes for adoption. We will work closely with our stakeholders during this process to gather input and ensure an open and honest dialogue. This is crucial to address new technologies, emerging issues, and trends in the energy and building sector. Once the review is complete, additional Vermont Fire and Building Safety Code amendments will occur in 2024. The review will also consider the economic impact of these standards on housing.

The study group acknowledged from the beginning that several factors contribute to the cost of housing, which were not considered in this study. These include the cost of materials, supply chain issues, and lack of contractors, which can extend construction time and increase project costs. Other factors include Act 250 and local regulation timelines and permit fees, higher interest rates, the high cost of land, and indirect expenses (overhead), all of which contribute to housing costs.

The report is in four sections:

1. Exits
2. Sprinkler Systems
3. Elevators
4. Permitting and Inspection Services

Each section provides a general summary of the topic, findings, and recommendations. These sections were identified based on “pitch statements” that committee members proposed.



Although some conclusions and recommendations don't have specific cost savings, they have tangible benefits. Pitch statements were helpful in this report because not all participants thoroughly understood safety codes or had background knowledge in fire science and fire protection.

The report includes some recommendations that may not result in immediate cost savings, but they can offer more flexibility to developers and enable them to construct additional housing units. Additionally, we have listed some incentives that the Division of Fire Safety has already implemented in its rules to encourage the construction of new housing units.

## Existing Division Incentives “Not All Inclusive”

The Division of Fire Safety provided an overview of current housing incentives in our Vermont Fire and Building Safety Code Rules. Through rulemaking, the Division of Fire Safety amends the national standards to better align with protecting Vermonters. For example, we have amended/developed our ground snow load map for Vermont because of the heavy snow loads in the mountains. Another example is our smoke alarm laws, which allow only photoelectric-type sensing technology for early fire warnings in our residential structures. Some further significant examples of amendments are:

- DFS allows up to eight guests to reside in a residential structure/unit while complying with the life safety code's one- and two-family dwelling occupancy chapter (NFPA 101), which provides the least restrictive code requirements. The national standards allow only three guests before classifying the occupancy as a Rooming and Lodging Facility, providing a much higher level of fire protection/life safety. This amendment will enable hundreds of bed and breakfast operations to operate without being classified as a rooming and lodging facility. This change is highly successful, has allowed bed and breakfast operators significant flexibility, and has encouraged new operators.
- The Division of Fire Safety allows the installation of 10-year tamper-resistant photoelectric smoke alarms in sleeping rooms in residential structures built before 1994. This allows the landlord to install the alarms in existing sleeping rooms without the added cost of hiring an electrician to wire hardwired devices, saving thousands of dollars in some circumstances.
- The Access Board accepts a variance request for installing a limited-use, limited application (LULA) lift versus a standard elevator when the cost is disproportionate between the renovation project and elevator cost. A LULA lift can also be an excellent cost-saving alternative in historic and existing buildings.
- We modified and reduced the window size requirements to meet rescue and ventilation requirements in existing residential occupancies. This has allowed thousands of existing windows to remain in use and allowed replacement windows to be installed during renovations without modifying the window's rough opening.

- We established a permit process that allows projects under \$200,000 to use an abbreviated permit application, and many of these applications are provided to the fire marshal in the field rather than having the project reviewed by the office plan review department. This process allows the fire marshal to meet with the owner/contractor on site promptly, allowing a faster turnaround time on permits for those projects deemed minor in scope. Small projects are discussed in the field, and everyone ends up on the same page and knows what is expected.
- We offer up to a \$2000.00 permit fee rebate when installing a fire sprinkler system.
- We offer technical support upfront on projects to help identify high-ticket items or to guide the applicant on the process. These have proven valuable and prevent high-dollar mistakes in the project's design and construction phases.
- We have instituted an online payment portal, and plans can be submitted electronically.
- We have equipped our fire marshals with laptops and “air cards,” so permits/permission to work can be issued from their vehicles, reducing turnaround time on permits.
- All the National Standards now require fire sprinkler systems in all new residential construction. (1) We have exempted the 1&2 Family Dwelling Fire Sprinkler Requirement and do not require these occupancies to be protected. However, we will evaluate the tradeoffs and equivalencies in the rule-making process over the summer of 2024. (2) We have amended the national standard (NFPA 101) to allow an exemption from the fire sprinkler installation in new multi-family occupancies (3 or more units), provided the dwelling unit has its dedicated exit to the outside. Some builders have used this exemption, especially in condominium or townhouse-type projects.
- The identification number, initial inspection by a commissioned inspector, and operating certificate shall not be required for boilers designed to heat individual dwelling units. Boiler(s) connected to a single system with a total aggregate heat output capacity of less than 199,000 BTU/hr serving apartments or residential condos are not required to have a commissioned inspection and operating certificate. This saves the owner money.

## Findings and Recommendations

The groups represented were provided the opportunity to submit “pitch statements,” which were thoughts, opinions, considerations, and suggestions on how we might incorporate change in our codes and standards, amend our rules, and modify our policies to support initiatives to reduce construction costs. Not all members are intimately involved with the complexity of codes and standards but were familiar with the housing crisis. In response to the pitch statements, discussions covered many topics, including exiting, fire sprinkler systems, elevators, permitting, municipal inspection agreements, codes and standards, fire separation, and challenges when renovating existing mixed-use buildings for potential housing.

# 1. Exits

## Findings

Two broad categories were explored under the subject of building exiting: (1) Number of exits and (2) Exiting in existing buildings. It is essential to define what an exit is because, in the fire safety arena, exits are only one component in the means of egress, and a change in one component affects the other components. All structures have a means of egress, defined as “**a continuous and unobstructed way of travel from any point in the building to a public way.**” A means of egress has three distinct components: exit access, the exit itself, and exit discharge. A fundamental concept of exiting is to provide occupants with two ways out because the primary escape route/exit is not always usable in a fire situation. Emergency responders must also be provided with protected exits when performing search and rescue operations. For this report, we have defined exit and means of escape.

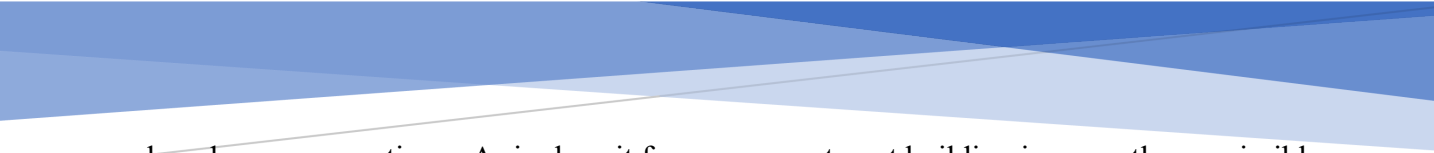
- **Exit:** An exit is a protected path of travel (fire-rated construction, location, design) that provides occupants a protected path(s) of travel to the outside of the building to a public way.
- **Means of Escape:** A way out of the building or structure that does not conform to the strict definition of means of egress but does provide an alternate way out.

In 1&2 family dwellings (single-family homes and duplex structures), the codes require each dwelling unit and each sleeping room to provide a primary and secondary **means of escape**. The primary means of escape from a sleeping room is the sleeping room door, and the secondary means of escape is a window meeting certain size dimensions. It must also be within 20 feet of the grade and no higher than 44 inches above the floor (allowing children to access the window). For this report, however, we will be focused on multi-family unit apartment buildings (3 or more units).

The group discussed the feasibility of reducing the number of required exits to one in certain buildings, although “certain buildings” were not articulated or defined. Conceptually, a typical multi-story apartment building in Vermont allocates a substantial portion of space, potentially as much as 20%, to hallways and circulation. Primarily, the codes require two exit stairwells, or one stairwell and one exterior stair mandated by the life safety code. In contrast, European fire codes permit smaller and more efficient layouts, which can lead to significant cost savings without compromising safety standards. DHCD and other stakeholders are discussing with the Division of Fire Safety (DFS) to explore whether the European approach can be applied successfully in Vermont.

The Division of Fire Safety provided the group with a comprehensive code overview of the existing requirements for existing and new residential occupancies based on the current adoption of the 2015 NFPA 101 Life Safety Code. Many of our multi-unit residential buildings require two exits remotely located from each other, reducing the likelihood that a single fire could obstruct both exits, trapping occupants and preventing emergency responders from conducting





search and rescue operations. A single exit for a new apartment building is currently permissible provided:

- the building is four or fewer stories in height;
- the building contains no more than four units per floor;
- the building is protected with a fire sprinkler system. **Exemption we added to our rules: except where every dwelling unit provides one of the following: 1) Exit door opening directly to the street or yard at ground level; 2) Direct access to an interior stair serving only that unit and separated from all other portions of the building by fire barriers having a 1-hour fire resistance rating with no openings therein.**

We explored existing requirements from Europe through the National Fire Protection Association. We received substantial information from European jurisdictions, and single exits were commonly used in flats or single-story buildings. How the codes are managed in Europe makes it easier to comprehend with first-hand knowledge and experience applying the standards. The application of codes in Europe considers a comprehensive application of theory versus prescriptive standards.

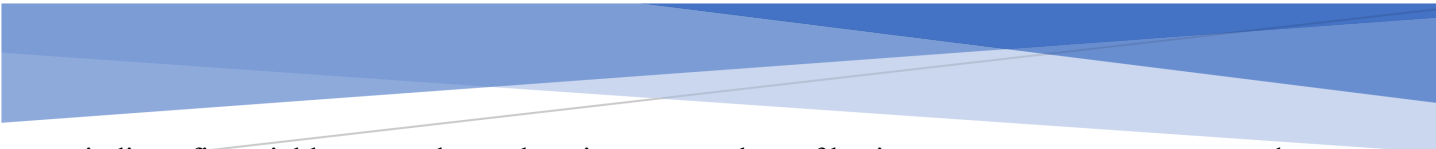
AIA-VT raised concerns over meeting the prescriptive exiting code requirements in some older historic buildings with mixed-use. The revitalization of our vacant and underutilized downtown upper floors is essential in addressing the housing crisis.

## Recommendations

1. Under the provisions of NFPA 101- Life Safety Code (single exit exemption), the code restricts each floor to a maximum of 4 units as a condition. We are exploring amending the code in our rules to allow six units per floor under the (single exit exemption) provided other exemption criteria are met. The amendment would allow six additional units in a typical 3-story multi-unit residential structure.
2. We can increase permitted building height in structures of Type 5A construction to 5 stories instead of only 4, perhaps with 1 HR separations, etc.? See page 17 for further discussion of what is being done in Washington State.
3. In rulemaking in 2024, spend time exploring how to address better AIA's concerns regarding exiting existing mixed-use occupancies and historic buildings. We could not address this in a meaningful way in this report. In our rulemaking, we will address the subject matter and develop a consensus document for architects and fire safety inspectors to bring more predictability.

## 2. Sprinkler Systems

In the realm of fire safety, residential fire sprinkler systems provide the most reliable and passive life safety protection available. Thousands of lives could be saved yearly if residential structures had fire sprinklers. In 2022, Vermont experienced 359 building fires, mostly residential structures. The annual direct fire loss in Vermont is in the millions of dollars. It does not consider



indirect financial losses such as relocating tenants, loss of business, revenue, tax revenue, and other economic losses.

Many code tradeoffs are permitted in the national standards when a building is protected with a residential fire sprinkler system. Sometimes, these tradeoffs make it financially feasible to install the system, allowing more flexibility in use and design. We have not adopted the residential 1&2 1-family fire sprinkler requirement. In 2024, during our rule-making process, we will establish a sprinkler system coalition to assess and evaluate current standards and the financial benefits of tradeoffs and the benefit from fire insurance (ISO Rating). Below are some expected benefits/tradeoffs associated with residential sprinkler systems.

- Residential fire sprinkler systems buy time and save lives by extinguishing fires and preventing flashovers from occurring. Fire Departments will deliver 1000+ gallons of water or more at 150 psi per minute, while a residential sprinkler head discharges around 12-15 gallons of water per minute at much lower water pressure. Only the sprinkler head activated due to heat impingement discharges water (not all heads) goes off. The system protects occupants and affords our fire responders lifesaving protection. When you consider fire department response times in some rural departments (10-20 minutes longer), a fire can often grow so fast that the environment is not tenable, and “flashover” may occur before firefighters arrive. Flashover is when all contents auto-ignite, which is not survivable, with flashovers occurring in minutes.
- Sleeping rooms are no longer required to have a window meeting rescue and ventilation to meet the secondary means of escape requirements. This means a below-grade basement under grade could be used for living and sleeping, adding valuable space, adding more sleeping rooms, and, in some cases, adding a completely new dwelling unit.
- Reduces the environmental impact of released toxins and hazardous materials and protects our families and first responders by reducing exposure to known carcinogens.
- Significantly reduces the economic loss of rental property because many structures suffer catastrophic loss without fire sprinklers, resulting in fewer rentals and homes.
- In new construction, you can add additional floor levels (exceeding building code height and area limitations) and even change the construction type of the building from steel to wood.
- The number of exits can be reduced, the fire rating of corridors can be reduced, the fire rating of door assemblies can be reduced, and existing historic buildings can be protected from fire while allowing alternatives and equivalencies to be utilized to support economic development.
- Fire separation ratings between mixed-use occupancies can be reduced by an hour.
- Protection of hazardous areas (woodworking shops, storage rooms, and mechanical rooms) with fire-rated construction can be eliminated or reduced.

## Findings

Although the downtown tax credit program offers excellent incentives and many fire sprinkler systems have been installed because of the tax credit program, there remain circumstances when the cost of a fire sprinkler can be challenging. When the building code requires a fire sprinkler system life safety code or the system is being proposed as part of the variance process, some challenges include;

- Mixed-use buildings can require a commercial sprinkler system. This costs substantially more than a residential system. Heads have to be located in all closets and concealed spaces. Water pressure is higher, requiring a more expensive connection to water mains and/or more storage capacity. In an existing mixed-use building with no municipal water supply, a water storage tank or cistern is usually required. If the automatic fire sprinkler system requires a fire pump, a 3-phase electrical service must be provided. These two factors raise sprinkler protection costs when no public water is available.
- Under the provisions of NFPA 1- Fire Code, 2015 edition Chapter 18.2.3.2 (Access to Buildings), A fire department access road shall extend to within 50 feet of at least one exterior door that can be opened from the outside. When a sprinkler system is installed in a one- and two-family dwelling or townhouse, the distance can be increased to 150 feet. Some felt the 50-foot distance was too restrictive and should be increased to 150 feet. This would allow more ADUs to be constructed without sprinkler protection. It is not uncommon for fire departments to have pre-assembled hose lines (150-200 feet).
- Automatic fire sprinkler systems can be expensive, especially in small existing building projects with no municipal water supply. Although design options are available to address the challenges, water supply/storage can be a cost driver.
- Evaluate sprinkler requirements for the one-exit exemption in areas without public water supply.
- Some towns charge water service impact fees for sprinkler systems that disincentivize the sprinkler installation. The Division of Fire Safety offers a \$2000.00 sprinkler rebate from the total construction permit fee. ACCD offers sprinkler system tax credits as part of the downtown designation program, which is very successful.
- The Division of Fire Safety recognizes that the model code groups require more occupancies to be protected with automatic sprinkler systems. This is partly due to new, evolving technology that can increase fire risks, such as EV charging stations, Lithium-Ion Batteries in mobile devices like e-bikes, E-scooters, power equipment, photovoltaic systems, energy storage systems, cannabis growing, extraction and lightweight composite construction and the hazards these present to occupants and first responders. Extensive national research has been conducted on how the risks and hazards of Lithium-ion battery technology can be managed safely.

## Recommendations

- Work with municipalities to incentivize sprinkler system installations by encouraging or mandating through statute to eliminate water impact fees. Additionally, when

municipalities engage in street projects and/or water/sewer service upgrade work, there could be coordination between the towns and the division of fire safety or municipal building department to determine if a building is planned to be sprinklered. It makes more sense to upgrade water lines when road repairs are made, as it can offer significant cost savings to the property owner.

- Provide economic incentives to help owners offset the expense of installing a fire sprinkler system.
- The Division of Fire Safety needs to clarify how we treat phased-in sprinkler installations for housing projects under renovation and construction. Standards stipulate how to protect buildings under construction/renovation. Buildings under renovation and construction are at high risk of fires (smoking, use of torches, welding, lack of security, temporary wiring, and temporary heating). Recently, Morrisville experienced a fire in a large new residential apartment building one week before it was scheduled to open. The monetary cost of the damage was significant, delaying occupancy for months. The building had a fire sprinkler system installed, but it had not been turned on, pending a test. Fire Safety has adopted fire prevention codes for buildings under construction, but there are some areas for improvement regarding phasing in the fire protection systems. We have been in consultation with our sprinkler system professionals and are actively working on a solution for the upcoming adoption of the 2021 codes.
- Evaluate the access road requirement in NFPA 1 and consider increasing the setback distances to construct more ADUs.

### 3. Elevators

#### Findings

Elevator installations are regulated under the authority of **(21 V.S.A. § 141)**. Under the authority of 21 V.S.A. § 144 the Elevator Safety Review Board is created and shall adopt rules that include the Safety Code for Elevators and Escalators, ASME A17.1; the Safety Code for Existing Elevators and Escalators, ASME A17.3; the Safety Standards for Platform Lifts and Stairway Chairlifts, ASME A18.1; and Standard for the Qualification of Elevator Inspectors, ASME QEI-1. The Division of Fire Safety Chairs the Elevator Safety Review Board and promulgates rules to adopt the applicable standards.

The Division of Fire Safety also enforces the Americans with Disabilities Act (ADA). This includes all aspects of providing barrier-free access to public buildings. This includes plan review, inspection, and enforcement of the Vermont Access Rules, which the Division of Fire Safety promulgates.

There were three general subject areas discussed in the group about elevators, including:

- Elevator cab size
- Machine Room Less (MRL) Elevators

- Direct Fire Safety to conduct elevator inspections rather than a third party.

Elevators provide vertical access to residential housing units and are convenient when moving furniture and belongings into the housing units. In fact, in highly populated college towns, elevators are necessary for moving furniture. Occupants with physical disabilities under current State and Federal Law must be afforded accommodation and barrier-free access. First, we address the elevator size issue raised as a possible cost-saving measure if the size was standardized, and second, we will discuss the new Machine Room Less Elevator.

### Elevator Size

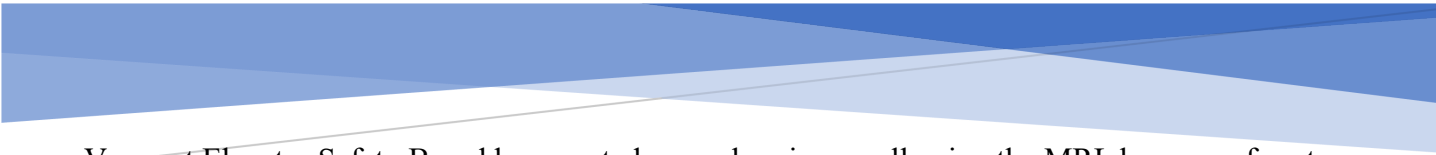
**Code Requirement:** The 2015 Vermont Fire & Building Safety Code Rules adopted the 2015 International Building Code 3002.4 with amendments. It replaces 3002.4 with “**An elevator car of such a size and arrangement to accommodate an ambulance stretcher (24" X 84") as specified in section 3002.4** shall be provided where a passenger elevator is newly installed in a building **three or more stories in height above or below grade plane/grade level.**”

- Burlington and So. Burlington Fire Departments have completed extensive field research in elevator dimensions. The research was necessary because of the Federal DOT Triple K ambulance cot specification change to accommodate the physical attributes of today’s “average” person. The stretcher’s size has been updated to provide safer and more comfortable transportation for a patient. These units are now incorporating crash-resistant 5-point patient harnesses coupled with raising and lifting assist components designed to prevent shoulder and back injuries to the emergency providers. These safety enhancements now make the stretchers wider and longer. All ambulance stretchers used in Vermont ambulances are longer and wider than the IBC/State minimum requirement.
- If multiple elevators are installed in a building providing accessibility to the same floors and occupants, only one elevator is required to be of the larger size (4 feet by 8 feet). The remaining elevators may be of standard size. When considering demographics and the fact that people are aging in place, more and more EMS calls for service are occurring where the use of stretchers are necessary. The average cost of the larger elevator is estimated at \$10,000-\$12,000, but the cost could be considerably higher.

### Machine Room Less Elevators

MRL elevators were not discussed much with the study group; instead, they came up-in internal DFS conversations. On the surface, this drew some interest because there could be cost savings if the elevator machine room could be eliminated, and the controls installed in an auxiliary type of room or next to the elevator in the corridor. The current codes need to recognize this new installation method. We will adopt the new standards when we initiate the rule-making process in the summer of 2024.

There has been concern expressed regarding this new installation initiative. If the elevator mechanic works on the controller and leaves it open, then high-voltage electrical wiring could be exposed to the public. Some States have prohibited the MRL because of safety concerns. The



Vermont Elevator Safety Board has granted several variances allowing the MRL because of cost savings and space limitations.

### Fire Safety Elevator Inspections

Currently, elevators and conveyances are inspected by third-party licensed inspectors. Fire Safety does not have available resources to conduct elevator inspections. If Fire Safety had qualified inspectors, we would have to charge a nominal fee to offset the program's cost. However, we are still determining if any efficiency or measurable cost savings would be gained.

### Recommendations Elevator Size and MRL

- Both the elevator size and the use of MRLs can be better evaluated through the rule-making process in the summer of 2024. There are tangible benefits for requiring the larger elevator from an emergency services viewpoint and from a tenant perspective that may outweigh the costs. Contacting other states to see how they are grappling with this will better serve our findings and any future recommendations through the rule making process.
- Refine the cost savings of both the elevator size and MRLs to define the potential cost savings better. The \$10,000-\$12,000 figure is not an official contractor estimate but an estimate provided by Bill Henry, who serves on the Elevator Safety Board. The potential cost savings are being further evaluated.
- The Division should hire a third-party consultant to review the entire elevator safety program, including the board, to see if we can gain some program efficiencies and possibly reduce the cost of some of the services provided to business owners.

## 4. Permitting and Inspection Services

The Division of Fire Safety is responsible for issuing construction permits and conducting safety inspections to comply with the codes and standards adopted by the State. The permitting and inspection services are provided under the authority of **20 V.S.A. § 2731 Prevention and Investigations of Fire**. This authority authorizes the Commissioner to adopt rules necessary to protect the public. The Division fulfills this mandate and ensures buildings are safe to occupy by:

- reviewing plans (construction documents) for compliance with national minimum standards adopted by the rule;
- licensing and certifying trade professionals, including electricians, plumbers, sprinkler designers, sprinkler installers, fire alarm installers, gas technicians, oil technicians, and suppression system installers;
- conducting inspections to validate compliance with the adopted safety and building code standards;

- approving continuing education curricula and contracting with testing and certifying entities across all trade professions.

The Division of Fire Safety adopts the National Fire Protection Association and International Code Council Standards. These two so-called “Model Code Groups” are embedded in some fashion in every state in the United States, and they are the only two model code publishing entities. The Division issues approximately 2600-3000 permits annually with an estimated construction valuation of 550-700 million dollars. We conduct roughly 13,000 inspections, including plumbing and electrical. Six plan review staff review and issue permits; inspections are conducted with 27 field-based inspectors.

The Division conducts rough electrical and plumbing, construction, and final occupancy inspections, and we respond to complaints alleging unsafe conditions. We license or certify eight primary trade professions and regulate several subordinate trades. The Division is in the process of procuring a new document management system to modernize our programs.

## Findings

AIA-VT made several comments and suggestions in this area. Some of these have been addressed elsewhere in this report, but we have included them here for clarity.

- Set a goal of issuing permits in 15 days, provided the application is complete and the project involves a design professional.
- Explore the possibility of increasing the number of units per floor in a sprinklered building with a single means of egress, including additional protections (i.e., 1 HR unit/corridor separations, etc.).
- Explore the feasibility of allowing a 5-story type 5A construction building for R-1, R-2, and 1-1 use. Currently, the code restricts the height to 4 stories. This change has been adopted by the state of Washington when stair pressurization is provided (**504.4.1 Stair enclosure pressurization increase**. *For Group R-1, R-2, and I-1 Condition 2 Assisted living facilities licensed under chapter 388-78A WAC and residential treatment facilities as licensed by Washington state under chapter 246-337 WAC located in buildings of Type VA construction equipped throughout with an approved automatic sprinkler system by Section 903.3.1.1, the maximum number of stories permitted in Section 504.4 may be increased by one provided the interior exit stairways and ramps are pressurized by Sections 909.6.3 and 909.20. Legally required standby power shall be provided by Sections 909.11 and 2702.2.16 for buildings constructed in compliance with this section and be connected to stairway shaft pressurization equipment, elevators, and lifts used for accessible means of egress (if provided), elevator hoist way pressurization equipment (if provided) and other life safety equipment as determined by the authority having jurisdiction. For the purposes of this section, legally required standby power shall comply with 2020 NEC Section 701.12, options (C), (D), (E), (F), (H), or (J) or subsequently revised section number(s).*).
- Adopt the International Residential Building Code for 1&2 Family Dwellings.

- Use the IBC-International Building Code for new buildings, not NFPA and ICC.
- Improve consistency between fire safety and municipalities with an inspection agreement with the division.
- Direct Fire Safety to conduct elevator inspections, not third-party inspectors.
- Prioritize housing projects to expedite permits and reduce turnaround times.
- Improve turnaround time for variances. Often, variances must be resolved before a particular portion of a project can commence.
- Provide technical guidance by developing a technical guidance document that provides predictability to projects focusing on fire separation assemblies and fire separation ratings. Consider allowing assemblies that are not UL-listed using engineering/architectural performance-based options.
- AIA-VT would like to prohibit local municipalities from adopting more restrictive codes and building ordinances than the Division of Fire Safety adopts.

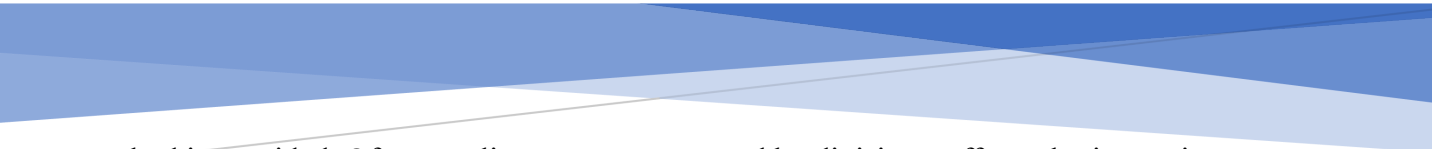
Annually, the division issues 2600-3000 permits, with 90% issued within 30 days and an average turnaround time of 15 days. This is accomplished with six plan review staff. We implemented a new construction permit application under \$200,000 several years ago. The new abbreviated application was created for those projects deemed minor in scope to streamline projects, creating a bottleneck. The object was to distribute the majority of permit applications under \$200,000 to field staff, who, in turn, could be directly connected with the applicant rather than directing the applicant to our central plan review process. This new initiative has proven successful for the applicant because inspectors can manage the project from the field while providing technical assistance. Approximately 50 % of our permits issued are entered into our database as a field review. Providing owners with technical assistance reduces permit turnaround times, resulting in a safer and healthier building.

The Division of Fire Safety is in the process of procuring a new modern document management system. The system will allow online permit submittals and will allow applicants to track their permit status and variance status. Inspection reports will be accessible to anyone, and the system will provide applicant guidance in the permit process, allowing more complete applications to be submitted. More complete applications allow for a timelier construction permit issuance while providing a much more detailed data input solution for fire safety.

The Division of Fire Safety has developed a matrix to better mesh the National Fire Protection Association Standards with the International Code Council Standards. The two model code groups (NFPA and ICC) are more similar in the code requirements than they used to be. ICC refers to the NFPA Standards several hundred times within their I-Codes.

The Division receives variance requests for new and existing buildings when a prescriptive code requirement may be impractical or unwarranted or an equivalency or alternative protection





method is provided. Often, applicants are encouraged by division staff to submit a variance request to the District Manager. Years ago, the division established a Variance Review Board, but the system resulted in a severe backlog of requests because the board could only meet once a month due to scheduling. Several years ago, the Division of Fire Safety distributed the variance requests to the district offices to expedite the review time. For the most part, this has been very successful because when a district office receives a variance request, the request can be acted upon much faster than waiting for a monthly board meeting. Managers share their variance request determination letters before the final decision is made so there are extra eyes on the request for input so we can maintain consistency in the decision-making. The number of variances is declining, and we are optimistic our new database will bring transparency to the process.

### Recommendations

- Assemble a group of stakeholders to discuss the feasibility of adopting the International Residential Building Code. The Division opposes extending its authority into single-family, owner-occupied, free-standing dwellings.
- Explore the strong possibility of prioritizing housing projects. This would include accelerated plan and field reviews for all housing projects by putting them before commercial projects.
- Develop a technical guideline brochure with input from contractors and AIA-VT to bring more predictability to renovating and revitalizing our existing buildings to assist in accelerating new housing units. The guideline would focus on exiting, fire separation, and vertical/ horizontal fire rating.
- Study the current matrix the Division utilizes when amending the 2015 Vermont Fire and Building Safety Code, focusing on reducing housing costs while maintaining a reasonable level of safety.
- Work with stakeholders on the build-out of the new database so we can capture suggestions to improve our business flow in the permit process.

### Conclusion

The Committee had a productive and respectful engagement with diverse stakeholders. We focused on fire prevention and building codes applicable to new and existing housing projects. The group acknowledged that there are multiple factors contributing to the housing crisis, such as land use permitting, demographics, material cost, land acquisition, equipment cost, engineering cost, permitting, the time it takes to construct a building, lack of trade professionals, higher interest rates, and difficulty in attracting new landlords to invest in rental property. We also recognized the importance of providing a safe and healthy living environment and building resilience to ensure that owners receive what they pay for.

The Division looks forward to collaborating with all stakeholders throughout this summer's rulemaking process.