



COUNCIL REPORT

Report Date: April 16, 2024
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Meeting Date: June 25, 2024
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TO: Vancouver City Council

FROM: General Manager/Fire Chief of Vancouver Fire Rescue Services and the Chief Building Official

SUBJECT: Fire By-law Amendments for Fire Protection Upgrades

Recommendations

- A. THAT Council approve, in principle, amendments to the Fire By-law generally as set out in Appendix A.
- B. THAT Council approve, in principle, amendments to the Building By-law generally as set out in Appendix B.
- C. THAT the Director of Legal Services be instructed to bring forward for enactment by Council a by-law to amend the Fire By-law as generally set out in Appendix A, to come into force and take effect upon enactment, except that the requirement to add sprinkler isolation vales is to come into force and take effect 1 year after enactment.
- D. THAT the Director of Legal Services be instructed to bring forward for enactment by Council a by-law to amend the Building By-law as generally set out in Appendix B.
- E. THAT Council name the Fire By-law amendments regarding fire protection upgrades in honour of Mr. Dennis Guay and Ms. Mary Ann Garlow as generally recommended by the Coroner's Inquest into the Winters Hotel fire.

Purpose and Executive Summary

This report recommends amendments to the Fire By-law, and consequential amendments to the Building By-law, that will provide increased safety for persons and enhanced administrative efficiency.

Sprinkler Isolation Valves

In response to the Winters Hotel fire on April 11, 2022, staff propose mandating the addition of isolation valves for each floor of sprinklers in buildings with residential and care occupancies. If a fire occurs and is subsequently controlled or extinguished by the sprinkler system, the sprinkler system could be shutdown only for the floor where the fire occurred. Sprinkler protection for the remainder of the building could be maintained, while the sprinkler system awaits service to be restored to full operating condition.

Gates in Front of Exits

Many storefronts in the Downtown East Side have had gates or doors installed to provide security against theft and vandalism after hours. Many security gates and doors were installed without building permits and do not comply with the Building By-law requirement for unobstructed egress. Staff propose to have Council amend the Fire By-law and the Building By-law to permit the installation of security gates and doors provided certain mitigating features are added that provide an acceptable level of life safety for the building occupants when the gates or doors are locked.

Administration

Amendments to the administrative provisions of the Fire By-law are proposed that will close a gap in the method of delivery of notices and orders.

A minor amendment to the Building By-law is proposed that will correct an error in printing.

Council Authority/Previous Decisions

Under section 311 of the Vancouver Charter, Council may make by-laws to maintain acceptable standards for fire safety in buildings and facilities within the city and within the scope of the provincial Fire Services Act.

Section 306 (1) (w) of the Vancouver Charter provides that Council may make by-laws adopting, by reference, any codes relating to fire safety.

In 2019, Council enacted Fire By-law No. 12472, which incorporated the provisions of the 2018 BC Fire Code with certain changes to deal specifically with issues that are unique to Vancouver. Since that time, Council has enacted several amendments to the Fire By-law.

City Manager's Comments

The City Manager concurs with the foregoing recommendations.

Context and Background

Sprinkler Isolation Valves

Prior to the April 11, 2022, fire the Winters Hotel had another fire three days earlier, on April 8, which was successfully controlled by a single sprinkler. Firefighters attended the site and, after confirming the fire had been extinguished, shut off the sprinkler water supply and conducted mop-up operations.

The Winters Hotel sprinkler system was designed to comply with the Building By-law and

referenced standards at the time of installation, which permitted a single shut off valve for the entire building. The sprinkler system was not required to be connected to a fire alarm system.

Since 1999, the Building By-law has required, for all new construction except houses, that the sprinkler system be connected to, and electrically supervised by, a fire alarm system. This means that the sprinkler system is required to have flow switches and isolation valves for each floor. Activation of a sprinkler due to the heat from a fire will trigger the fire alarm system and indicate the floor where the sprinkler was activated.

Electrical supervision of the sprinkler system means that if any of the floor isolation valve is closed, the fire alarm system will be triggered to emit an audible and visible trouble signal at the annunciator panel. This will alert passing occupants of trouble somewhere in the fire alarm system and immediate attention and repair is needed.

Whenever a fire protection system such as a sprinkler, standpipe, fire pump, or fire alarm system is impaired, the Fire By-law requires the building owner to provide temporary measures that offset the reduction in the level of life safety. The mitigating features can vary depending on the type of impairment; a fire watch is often required as one mitigating feature.

Gates in Front of Exits

Most of the commercial storefronts in the Downtown East Side have had security gates and doors installed for protection against theft and vandalism. The gates and doors are open during business hours but are closed and locked afterward. Many of these gates and doors have been installed without the benefit of a building permit, and do not comply with the Building By-law. The gates do not swing on a vertical axis in the direction of exit travel and are not readily openable from the inside of the building to allow escape.

Discussion

Sprinkler Isolation Valves

Staff are proposing a Fire By-law amendment which would mandate the installation of isolation valves for each floor of a building. Isolation valves will enable the sprinkler system, after having extinguished the fire, to be shut down (to minimize further water damage) only on the floor where the fire occurred, while maintaining sprinkler protection for the rest of the building.

By isolating sprinkler shut down to a single floor, a required fire watch can be limited to that floor only instead of the entire building, until the sprinkler system can be restored to full service by a qualified technician.

To lessen the cost of installing isolation valves on existing systems, staff are proposing that the addition of sprinkler flow switches for each floor will only be required when a new fire alarm system is required, or is provided, to properly annunciate the zone of sprinkler activation.

Electrical supervision of the sprinkler isolation valves by the fire alarm system is proposed to be a requirement, if the building is required to have a fire alarm system. Any improper closing of these valves will immediately indicate on the fire alarm panel. The proposed by-law amendment will not require each isolation valve to have its own trouble zone on the fire alarm panel – the isolation valves may be connected to a common trouble zone.

Where an existing fire alarm system is incapable of providing electrical supervision, each sprinkler isolation valve will be supervised in the open position by a steel chain and padlock until

the existing fire alarm system is replaced.

In recognition that numerous older buildings may be impacted, staff are proposing the Fire By-law amendment to add sprinkler isolation valves for each floor comes into force 1 year after the date of enactment.

Gates and Doors in Front of Exits

The Fire By-law requires that means of egress must be provided as required by the Building By-law and be maintained in good repair and free of obstructions.

Gates, and doors, many of which are folding style gates or overhead rolling shutters or doors, have been installed on existing storefronts and alleyways of businesses to deter theft and vandalism. These gates and doors typically do not comply with the Building By-law. Hardware on the gates and doors may not allow occupants inside to open the gate without keys, or specialized knowledge. Occupants behind the locked gate or door will then be unable to escape.

Staff are proposing amendments to the Building By-law and Fire By-law that address this issue, but also reflect the need for security.

The proposed amendments will distinguish between buildings or suites that have only one means of egress permitted by the Building By-law, which are typically smaller in size, and other suites that have at least two means of egress and could be significantly larger. Where the building or suite has at least two means of egress, the security gate or door will be permitted to be locked provided at least one means of egress remains readily openable and certain safety features are added to mitigate risk including additional portable extinguishers, emergency lights, smoke alarms and customized fire safety plans posted for the occupants.

Where the building or suite has only one means of egress, the security gate or door must not be locked if there is any person inside.

Administration

The current administrative provisions on delivery of Fire By-law infraction notices, and orders, including fire watch orders, do not completely address to whom notices and orders be issued.

The Fire By-law provides the Fire Chief with authority to issue notices of violation, and orders, including fire watch orders, to “an owner, occupant or other person”. The Fire By-law sets out how a notice, or order can be served on an owner, but it does not set out how a notice or order can be served on an “occupant or other persons.” The proposed amendment will correct the oversight.

A minor amendment to the Building By-law is proposed that will correct an error in printing.

Financial Implications

The proposed sprinkler isolation valve by-law amendment would impact only older residential and care buildings that have a sprinkler system without floor isolation valves. The one-time cost to a building owner is estimated to be \$6,000 per floor including electrical supervision to a fire alarm system. The cost to install these valves is comparable to paying for a third party to perform a 24-hour fire watch. Staff are proposing that the Fire By-law amendment to add sprinkler isolation valves at each floor become effective 1 year from the date of enactment. This will allow time for building owners to prepare and budget for the financial implications and obtain

competitive pricing. There are no financial implications for the City, except that City sprinkler and electrical permits will be required for this work.

For the mitigating features to permit the installation of security gates and doors, the cost will be relatively inexpensive. The cost of a fire extinguisher is about \$100; emergency lighting packs and interconnected wireless smoke alarms are about \$100 per unit.

The proposed amendments to the Fire Bylaw and consequential amendments to the Building By-law are supported by Development, Buildings and Licensing, Arts, Culture and Community Services, and Finance, Risk and Supply Chain Management.

Legal Implications

If adopted, the proposals in this report will result in amendments to the Fire By-law and the Building By-law that address safety issues and other administrative issues.

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**APPENDIX A
PROPOSED AMENDMENTS TO THE FIRE BY-LAW**

**BY-LAW NO.
A By-law to amend Fire By-law No. 12472
Regarding Sprinkler Upgrades, Security for Non-Residential Floor Areas, and
Administration**

THE COUNCIL OF THE CITY OF VANCOUVER, in public meeting, enacts as follows:

1. This By-law amends the indicated provisions of Fire By-law No. 12472.
2. The name of this By-law, for citation, is the “Dennis Guay and Mary Ann Garlow Fire Protection Upgrade By-law”.
3. In Division B after Article 2.1.3.8., Council adds:
“
2.1.3.9. Sprinkler System Floor Isolation Valves
 - 1) Except for *buildings* with a sprinkler system designed in accordance with NFPA 13D, this Article applies to every *building* equipped with a sprinkler system and that contains a *residential occupancy*, a *care occupancy* with individual *suites*, or a *care occupancy* containing sleeping rooms not within a *suite*.
 - 2) Sprinkler system isolation valves for each *storey* must be indicating valves with built-in supervisory switches and shall be installed in accordance with the *Building By-law*.
 - 3) Except as permitted by Sentence (5), sprinkler system isolation valves must be electrically supervised by the fire alarm system.
 - 4) The installation of waterflow detecting devices is not required with the installation of sprinkler system isolation valves for each *storey*, unless the fire alarm system is replaced.
 - 5) Where the existing fire alarm system is incapable of electrical supervision, the sprinkler isolation valve must be chained and locked in the correct position until the fire alarm system is replaced at which time the sprinkler isolation valve must be electrically supervised by the fire alarm system.”
4. In Division B, Article 2.7.1.1., Council strikes out Sentence (1) and replaces it with:
“
"1) Except as provided in Article 2.7.1.9. *means of egress* must be provided in *buildings* in conformance with the *Building By-law*.”
5. In Division B, after Article 2.7.1.8, Council adds:
“2.7.1.9. Security Gates and Doors for Non-Residential Floor Areas
 - 1) This Article applies to *buildings* or parts of *buildings* classified as *assembly occupancy*, *business and personal services occupancy*, *mercantile occupancy*, *medium hazard industrial occupancy*, and *low hazard industrial occupancy*.
 - 2) Where at least two separate *means of egress* from part of a *floor area* are required by the *Building By-law*, a security gate or security door may be installed in front of an

exterior *exit* door of the *building* and may be locked, provided that:

- a) At least one *egress* door is readily openable from the inside without requiring keys, special devices or specialized knowledge of the door-opening mechanism,
 - b) The security gate or security door is designed to prevent locking at any time that the part of the *floor area* that it serves is open to the public or when the public is present,
 - c) A sign with the words “This door shall not be locked at any time that the public is present” in letters not less than 50 mm high shall be permanently affixed to both sides of the security gate or security door,
 - d) The path of travel between every locked security gate or security door and the *egress* door that is readily openable from the inside is provided with illumination not less than 10 lx at the floor level,
 - e) Controls for the lighting referred to in Clause (d) are provided near the *egress* door that is readily openable,
 - f) Emergency lighting is provided along the path of travel referred to in Clause (d) to an average level not less than 10 lx,
 - g) At least one portable extinguisher with a minimum rating of 4A:60B:C is installed in a conspicuous location within 2 m of every locked security gate or security door and in a conspicuous location within 2 m of the *egress* door that is readily openable,
 - h) If the *floor area* is not *sprinklered*, no more than 10 persons are present in the *floor area* served, when the security gate or security door is locked,
 - i) If the *floor area* is *sprinklered*, no more than 20 persons are present in the *floor area* served, when the security gate or security door is locked,
 - j) Every person present in the *floor area* served is trained about the procedures to be used in the case of emergencies, including evacuation procedures,
 - k) At least one copy of the emergency procedures and floor plan is posted in a conspicuous location in each *floor area* served, including the location of each portable extinguisher, each security gate or security door and each door which must remain readily openable,
 - l) The fire safety plan for the *building*, where required, is updated and kept in a location described in Article 2.8.2.5., and
 - m) The installation of the security gate or security door does not obstruct the required clear width of the doorway.
- 3) Where a single *means of egress* from part of a *floor area* is permitted by the *Building*

By-law, a security gate or security door may be installed in front of the exterior *exit* door of the *building* and is permitted to be locked, provided that:

- a) The security gate or security door is designed to prevent locking at any time that

the part of the *floor area* is occupied by one or more persons,

- b) A sign with the words “This door shall not be locked at any time a person is inside” in letters not less than 50 mm high shall be permanently affixed to both sides of the security gate or security door,
 - c) At least one copy of the emergency procedures and floor plan is posted in a conspicuous location in each *floor area* served, which includes the procedures to ensure no person is inside prior to locking the security gate or security door, and
 - d) The installation of the security gate or security door does not obstruct the required clear width of the doorway.
- 4) The requirements of the *Building By-law* Article 3.4.6.12 for the direction of door swing and Article 3.4.6.16 for door release hardware may be waived by the Chief Building Official for a security gate or security door.”.
6. In Division C, Sentence 1.4.3.3.(1), Council strikes out Clause (a) and replaces it with:
“(a) by delivery by hand to an *owner*, occupant or other person or to a representative of the *owner*, occupant or other person”.
7. In Division C, Sentence 1.4.3.3.(1) Council strikes out Clause (c) and replaces it with:
“(c) in the case of a contravention of this By-law by an owner or occupant, by posting a copy of it on the *building*, structure, facility or premises, or”.
8. In Division C, Sentence 1.4.3.5.(1), Council strikes out Clause (a) and replaces it with:
“(a) hand to an *owner*, occupant or other person or to a representative of the *owner*, occupant or other person”.
9. Council strikes out “owner” wherever it appears in the Fire By-law, and substitutes “*owner*”.
10. A decision by a court that any part of this By-law is illegal, void, or unenforceable severs that part from this By-law, and is not to affect the balance of this By-law.
11. Except for Section 3, this By-law is to come into force and take effect on the date of its enactment.

**APPENDIX B
PROPOSED AMENDMENTS TO THE BUILDING BY-LAW**

BY-LAW NO.

**A By-law to amend Building By-law No. 12511
Regarding Security for Non-Residential Floor Areas and Administration**

THE COUNCIL OF THE CITY OF VANCOUVER, in public meeting, enacts as follows:

1. This By-law amends the indicated provisions of Building By-law No. 12511.
2. In Division B Sentence 3.4.6.12.1), Council strikes out “(3) and Article 3.4.5.14.” and replaces it with:

“(3), Articles 3.4.5.14., and 3.4.6.20.”.
3. In Division B Sentence 3.4.6.16. 1), Council strikes out “(5) and Article 3.4.5.17.” and replaces it with:

“(5), Articles 3.4.6.17., and 3.4.6.20.”.
4. In Division B after Article 3.4.6.19., Council adds:

“3.4.6.20. Security Gates and Doors for Non-Residential Floor Areas

 - 1) This Article applies to *buildings* or parts of *buildings* classified as *assembly occupancy, business and personal services occupancy, mercantile occupancy, medium hazard industrial occupancy, and low hazard industrial occupancy.*
 - 2) A security gate or security door is permitted to be installed in front of an exterior *exit* door of the *building* provided the installation and use conform to the *Fire By-law.*”.
5. In Division B, Article 9.10.17.10. Council strikes out Sentence (1) and replaces it with:

“1) Except as provided in Sentences (2) and (3), foamed plastics that form part of a wall or ceiling assembly shall be protected from adjacent space in the building, other than adjacent concealed spaces within attic or roof spaces, crawl spaces, wall assemblies and ceiling assemblies

 - a) by one of the interior finishes described in Subsections 9.29.4. to 9.29.9.,
 - b) provided the building does not contain a Group C major occupancy, by sheet metal that
 - i) is mechanically fastened to the supporting assembly independent of the insulation,
 - ii) is not less than 0.38 mm thick, and
 - iii) has a melting point not less than 650°C, or
 - c) by any thermal barrier that meets the requirements of Sentence 3.1.5.15.(2).

