

Section 11.2. Upgrade Application

11.2.1. Upgrade Requirements

11.2.1.1. Upgrade Objectives

- 1) An *alteration* to an *existing building* shall trigger upgrading of the *existing building* to meet the following objectives
 - a) all unsafe conditions shall be corrected to an *acceptable* level,
 - b) all new materials and *construction* work shall comply with this By-law,
 - c) the *building* shall be upgraded to an *acceptable* level of
 - i) fire, life and health safety,
 - ii) structural safety,
 - iii) non-structural safety,
 - iv) accessibility for persons with disabilities, and
 - v) *water* efficiency,
 - d) any significant extension of the design life of an *existing building* beyond its original design life shall require upgrading to an *acceptable* level,
 - e) an *alteration* to an individual *suite* within an *existing building* will not trigger upgrades within any other *suites* except where the *alteration* creates non-conformity with the By-law within such other *suites*, and
 - f) the level of life safety and *building* performance shall not be decreased below the existing level.
- 2) An *alteration* to an *existing building* shall not trigger upgrading of the *existing building* to meet the rainwater management requirements described in Article 2.4.2.5. of Division B of Book II (Plumbing Systems) of this By-law.

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11.2.1.2. General Requirements

(See Note A-11.2.1.2.)

- 1) Where *construction* of *existing buildings* occurred before the effective date of this By-law, reconstruction or *alteration* of *existing buildings* is not a requirement of this By-law, except as required by Articles 11.2.1.3. to 11.2.1.11. inclusive.
- 2) Except as permitted by Sentences (3) to (9), and Articles 11.2.1.3. to 11.2.1.11., where an *alteration* is made to an *existing building*, the *alteration* shall comply with this By-law and the *existing building* shall be
 - a) upgraded to an *acceptable* level as defined in the *existing building* Upgrade Mechanism Model in Notes to Part 11, except that existing lighting exceeding the Lighting Power Density of ASHRAE 90.1-2016 shall be removed within existing spaces of a *suite* within the scope of a *project*,
 - b) upgraded to the satisfaction of the *Chief Building Official* where the *owner* demonstrates that the design levels, as defined by the Upgrade Mechanism Model in Notes to Part 11, present a hardship for the *owner*, or
 - c) upgraded to the satisfaction of the *Chief Building Official* through alternative upgrades, that demonstrate equivalent improvement where specific characteristics of the building are intended to be retained.
- 3) Except as required by changes of *major occupancy* in a *small suite*, where an *alteration* does not involve an *addition* or a change in *major occupancy*, further upgrading to an *existing building* is not a requirement of this By-law provided
 - a) *construction* or a full upgrade of the *building* occurred by means of a *building permit* issued on or after November 1, 1999,
 - b) all *unsafe conditions* are corrected to the satisfaction of the *Chief Building Official*, and
 - c) all new work is in compliance with this By-law.
- 4) Where a voluntary upgrade for fire alarm systems, *sprinkler systems*, *exits*, accessibility, seismic work, washrooms or kitchens for *single room accommodations*, energy efficiency or *building* envelope repair is carried out, no further upgrade of the *building* is required except that, where other work is included in the application, the upgrade requirement will only be based on the non-voluntary work proposed.
- 5) Where *building* envelope repair involves more than 60% of an opaque portion of a *building* face, the *building* envelope on the entire vertical section of that *building* face shall be replaced and upgraded to the thermal resistance

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and air-tightness requirements of Part 10, except where

- a) the scope of work is limited to the replacement of windows
 - b) the *building* is two *storeys* in *building height* or less and is required to comply with Part 9 per Division A, Article 1.3.3.3., or
 - c) the *building* face has heritage merit and is required to be retained as part of an approved retention plan.
- 6)** Where a *building* is altered and is a *post disaster building* as defined in Table 4.1.2.1., or where there is a major *addition* to a *post disaster building*, the entire *building* shall be upgraded to design upgrade levels F4, S4, N4 and A4 as detailed in the Upgrade Mechanism Model in Notes to Part 11.
- 7)** Where there is a temporary change of *major occupancy in a building for a temporary emergency shelter or an arts and culture indoor event*, the upgrade requirements shall be based solely on Section 11.6.
- 8)** Except as permitted by Sentence (10), where there is a change of *major occupancy* in a *building*, and the aggregate area of the change in *major occupancy* within any 5 year period is greater than 50% of the *building area* in a one *storey building* or greater than 100% of the *building area* in a *building* of more than one *storey*, the entire *building* shall be upgraded to design upgrade levels F4, S4, N4 and A4 as detailed in the Upgrade Mechanism Model in Notes to Part 11 except where
- a) the change in *major occupancy* is to a single *suite* of not more than 100 m², and the work does not exceed 5% of the *building area*, or
 - b) such upgrades are in conflict with an approved heritage retention plan.
- 9)** Where there is a change of major occupancy in a building, the upgrade requirements of Flow Chart #2 of the Upgrade Mechanism Model in Division B Appendix A need not be provided where
- a) the change in *major occupancy* is to a single *suite*,
 - b) the aggregate *suite* area does not exceed the lesser of 50% of the *building area* or 300 m²,
 - c) the *major occupancy* of the suite is Group D or Group E, and
 - d) the use and aggregate *suite* area complies with Table 11.2.1.2.-A.

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Table 11.2.1.2.-A
Maximum Aggregate Suite Area
Forming part of Sentence 11.2.1.2.(9)

Major Occupancy	Suite Use	Aggregate Suite Area	
		≤200 m ²	201 to 300 m ²
Group D	Administrative & Business Offices	Y	Y
	Barber and Hairdressing Shop	Y	Y
	Beauty Salon	Y	Y
	Health Care Offices (non-surgical, non-sedation)	Y	Y ⁽¹⁾
Group E	General Retail (Non-hazardous materials)	Y ⁽¹⁾	N ⁽²⁾

Notes to Table 11.2.1.2.-A.:

(1) Provided the Hazard Index of the space is not increased (see Table A-11.2.1.2.D)

(2) Except as acceptable to the Chief Building Official

11.2.1.3. Sprinkler Installation Requirements for the Addition of Dwelling Units in Multi-family Buildings

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(See Note A-11.2.1.3.)

- 1)** Except as provided in Sentence (2) and (4) and Sentence 11.2.1.4.(3), where an *alteration* to an *existing building* creates or adds one or more *dwelling units*, the *building* shall be *sprinklered* in conformance with Table 11.2.1.3.
- 2)** Where the *alteration* in Sentence (1) involves the *addition* of existing floor area to an existing *dwelling unit*, and that converted space is greater than 50% of the *floor area* of the original *dwelling unit*, the altered *dwelling unit* shall be considered as a new *dwelling unit* and the *building* shall be *sprinklered* in conformance with Table 11.2.1.3.
- 3)** If sprinklers are required by Table 11.2.1.3., they shall be installed throughout the *storey* on which the new *dwelling unit* is to be located and all *storeys* below the new *dwelling unit*.

4) A building need not be sprinklered in accordance with Sentence (1), if the construction value of the alteration does not exceed \$250,000.

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Table 11.2.1.3.
Sprinkler Installation Determination Where Dwelling Units are Added
Forming part of Sentence 11.2.1.3.(1),(2), and (3)

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Existing Dwelling Units	New Dwelling Units Added Over Any 5 year Period ⁽¹⁾				
	1	2-3	4-5	6	>6
0-1	Spr R ⁽²⁾	Spr R	Spr R	Spr R	Spr R
2-4	-	Spr R	Spr R	Spr R	Spr R
5-10	-	-	Spr R	Spr R	Spr R
11-20	-	-	-	Spr R	Spr R
>20	-	-	-	-	Spr R

Notes to Table 11.2.1.3.

- (1) The creation of dwelling units over the previous 5 years from the date of the proposed building permit application.
- (2) Sprinklers Required.

11.2.1.4. Upgrade Requirements for a Residential Building Containing not more than Two Principal Dwelling Units

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1) Except as permitted by Subsection 11.4, an alteration or addition to a solely residential building containing not more than two principal dwelling units shall comply with this By-law, and the existing portions of building shall be upgraded to an acceptable level as determined by Tables 11.2.1.4.(1)-A, 11.2.1.4.(1)-B, and 11.2.1.4.(1)-C.

Table 11.2.1.4.(1)-A
Fire and Life Safety Upgrade requirements for Residential Buildings containing not more than Two Principal Dwelling Units
Forming part of Sentence 11.2.1.4.(1)

Scope of Work	Smoke Alarms ⁽¹⁾	CO Alarms ⁽²⁾	Guards ⁽³⁾	Spatial Separation ⁽⁴⁾	Structural ⁽⁵⁾
Renovation	Y	Y	Y	N	N
Relocation or Reconstruction	Y	Y	Y	Y	Y
Horizontal Addition Floor Area					
up to 25% ⁽⁶⁾	Y	Y	Y	N	N
over 25% ⁽⁷⁾	Y	Y	Y	Y	Y
Vertical Addition Floor Area					
up to 25% ⁽⁶⁾	Y	Y	Y	N	Y
over 25% ⁽⁷⁾	Y	Y	Y	Y	Y

Notes to Table 11.2.1.4.(1)-A:

- (1) Smoke Alarms: to be installed in conformance with Subsections 3.2.4. and 9.10.19. as applicable.
- (2) CO Alarms: to be installed in conformance with Subsections 6.9.3. and 9.32.4. as applicable.
- (3) Guards: all unsafe guards to be upgraded to the satisfaction of the Chief Building Official.
- (4) Spatial Separation: Spatial separation of the building shall comply with Subsections 3.2.3., 9.10.14. or 9.10.15. as applicable; or as permitted by Section 11.3.
- (5) All existing wood frame walls to be anchored to existing concrete foundation walls for seismic resistance
- (6) Aggregate increase in floor area less than 25% of the building area (see flow chart #3 of Note A-11.2.1.2).
- (7) Aggregate increase in floor area greater than 25% of the building area.

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Table 11.2.1.4.(1)-B

Egress and Exit Upgrade requirements for Residential Buildings containing not more than Two Principal Dwelling Units
Forming part of Sentence 11.2.1.4.(1)

Scope of Work	Means of Egress ⁽¹⁾	Handrails ⁽²⁾	Exit Exposure ⁽³⁾	Stair Dimensions ⁽⁴⁾	Building Services ⁽⁵⁾	Falling Hazards ⁽⁶⁾
Renovation	N	Y	N	N	N	N
Relocation or Reconstruction	Y	Y	Y	Y	Y	Y
Horizontal Addition Floor Area						
up to 25% ⁽⁷⁾	Y	N	N	N	N	Y
over 25% ⁽⁸⁾	Y	Y	Y	Y	Y	Y
Vertical Addition Floor Area						
up to 25% ⁽⁷⁾	Y	Y	N	N	N	Y
over 25% ⁽⁸⁾	Y	Y	Y	Y	Y	Y

Notes to Table 11.2.1.4.(1)-B:

- (1) Means of Egress: confirm that access to exit (9.9.9.) and means of escape (9.9.10.) from all floor areas is compliant with regards to travel distance and fire separation (where applicable).
- (2) Handrails: all unsafe handrails to be upgraded to the satisfaction of the *Chief Building Official*.
- (3) Exit Exposure: *Exits* to be confirmed to be compliant with regards to *exit* exposure where applicable.
- (4) Stair Dimensions: Existing stairs in means of egress to comply with the dimensional requirements of Subsection 9.8.2.
- (5) Building Services: Restrain building service piping, conduit, and *appliances* to resist lateral movement due to earthquake.
- (6) Falling hazards: Restrain falling hazards within 3 m of the egress path to resist lateral movement due to earthquake.
- (7) Aggregate increase in floor area less than 25% of the building area (see flow chart #3 of Note A-11.2.1.2).
- (8) Aggregate increase in floor area greater than 25% of the building area.

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Table 11.2.1.4.(1)-C

Floor Area Upgrade Requirements for Residential Buildings containing not more than Two Principal Dwelling Units
Forming part of Sentence 11.2.1.4.(1)

Scope of Work	Flame Spread ⁽¹⁾	Floor Fire Separations ⁽²⁾	Suite Fire Separations ⁽³⁾	Lighting & Emergency Lights ⁽⁴⁾	Door Hardware ⁽⁵⁾
Renovation	N	N	N	N	N
Relocation or Reconstruction	Y	Y	Y	Y	Y
Horizontal Addition Floor Area					
up to 25% ⁽⁶⁾	N	N	N	N	N
over 25% ⁽⁷⁾	Y	Y	Y	Y	Y
Vertical Addition Floor Area					
up to 25% ⁽⁶⁾	N	N	N	Y	N
over 25% ⁽⁷⁾	Y	Y	Y	Y	Y

Notes to Table 11.2.1.4.(1)-C:

- (1) *Flame Spread Rating*: Exposed wall and ceiling finishes of egress routes to meet the requirements of Subsection 9.10.17. in exits
- (2) *Floor Fire separations*: Floor and occupied roof assemblies to be fire rated per Article 9.10.8.1.
- (3) *Suite Fire Separations* (where applicable): Residential *suites* to be provided with a fire separation in accordance with Article 9.10.9.14. and Section 9.37.
- (4) *Lighting & Emergency Lights* (where applicable): Lighting and emergency lighting to be provided in means of egress in accordance with Subsection 9.9.12.
- (5) *Door Hardware*: Door hardware within existing floor areas to be made adaptable as per Subsection 3.8.5.
- (6) Aggregate increase in floor area less than 25% of the building area (see flow chart #3 of Note A-11.2.1.2).
- (7) Aggregate increase in floor area greater than 25% of the building area.

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2) Where an *alteration* or *addition* is made to an existing residential *building*, containing not more than two

principal *dwelling units*, the energy efficiency of a the *building* shall be upgraded to an *acceptable* level in conformance with Table 11.2.1.4.(2).

Table 11.2.1.4.(2)
Energy Efficiency Upgrade Requirements for Residential Buildings containing not more than Two Principal Dwelling Units
 Forming part of Sentence 11.2.1.4.(2)

	EnerGuide Assessment ⁽¹⁾	Air tightness upgrades ⁽²⁾	Attic and Sloped Roof Insulation ⁽³⁾	Hot Water Heating ⁽⁴⁾	Space Heating
Alteration construction (\$) value					
\$0.00 to \$149,999	N	N	N	N	N
\$150,000 to \$249,999	N	N	N	Y	N
≥\$250,000	Y ⁽¹⁾	Y	Y	Y	Y

Notes to Table 11.2.1.4.(2):

- (1) An EnerGuide Assessment completed within the last 4 years must be submitted, a post-construction assessment must also be completed.
- (2) Where EGH>5 air changes per hour, air sealing is required.
- (3) Where attic insulation <R12 (2.11RSI), increase to R28 (4.93RSI); where attic insulation ≥R12 (2.11RSI), increase to R40 (7.04RSI); Insulation in existing attics shall not exceed R43.7 (7.7RSI). All flat roof and cathedral ceiling insulation shall be upgraded to ≥R14 (2.47RSI).
- (4) Domestic hot water equipment must be replaced in compliance with the domestic hot water requirements of Article 10.2.2.12. or a uniform energy factor of not less than 1.0, except the system may be gas-fired with a uniform energy factor of not less than 0.78 or a thermal efficiency of not less than 90% where: the building mechanical room, storage or service spaces have insufficient space to accommodate the footprint, height, or manufacturer-specified space requirements of the new equipment; the existing electrical panel has insufficient circuit or amperage capacity to accommodate the new equipment; the existing domestic hot water system is part of a combined system that also provides space-heating; the existing domestic hot water equipment was installed with a valid permit within the previous five years; or, equivalent emissions reduction measures are completed as *acceptable* to the *Chief Building Official*.

- 3)** Except as permitted by Sentence (4), where an *alteration* is made to an existing residential *building* containing not more than two principal residential *dwelling units*, a *sprinkler system* shall be installed
 - a) throughout the *building*, where more than one *dwelling unit* is created, reconstructed, or both,
 - b) throughout any *storey* on which a new principal *dwelling unit* is created, and all *storeys* below, or
 - c) throughout any *storey* on which an *alteration* to the *building* increases the aggregate area of an existing *dwelling unit* by more than 50% of the floor area. ; and
- 4)** A *building* need not be *sprinklered* in accordance with Sentence (3), if the *construction* value of the *alteration* does not exceed \$250,000.

11.2.1.5. Self-contained Volumetric Spaces

(See Note A-11.2.1.5)

- 1)** Where an *alteration* to a *building* is a self-contained volumetric space that is separated from the remainder of the *building* by a *non-combustible vertical fire separation* with a 2 h *fire resistance rating*, the upgrade requirements of this Part do not apply to the remainder of the *building* provided
 - a) the self-contained volumetric space is upgraded in conformance with this By-law,
 - b) the self-contained volumetric space does not *exit* through the remainder of the *building*,
 - c) the *building area* of the self-contained volumetric space is not larger than 10% of the existing *building area*,
 - d) a *non-combustible vertical fire separation* with a 2 h *fire resistance rating* is constructed as a continuous vertical *fire separation* from the *building foundation* to the underside of the roof sheathing, and
 - e) the self-contained volumetric space does not reduce the existing structural capacity of the *building*.

11.2.1.6. Relocated Buildings

- 1)** Except as permitted by Article 11.2.1.4., where a *building* is relocated from another municipality to the *City*, from another lot within the *City* or within its existing lot, the *building* shall be upgraded to Design Upgrade Levels F4, S4, N4 and A4, as determined by the Upgrade Mechanism Model in Notes to Part 11.

11.2.1.7. Relocated Property Lines

- 1)** Where property lines are relocated closer to a *building*, the *building* shall be upgraded to conform to the

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spatial requirements, fire department access requirements and *means of egress* requirements of this By-law or the applicant shall demonstrate that the relocated property lines and the *existing building* configuration comply with this By-law.

11.2.1.8. Demolished Buildings

1) Where a *building* is being demolished in whole or in part, the *demolition* work shall conform to the requirements of Part 8 and any part of the *building* that remains after *demolition* shall be upgraded in conformance with Article 11.2.1.2.

11.2.1.9. Damaged Buildings

1) Where a *building* has been damaged, all work necessary to reconstruct the damaged portions of the *building* shall conform to this By-law and the Fire By-law and the remainder of the *building* shall be upgraded in conformance with Article 11.2.1.2.

11.2.1.10. Fire Department Order

1) Where an order issued under the Fire By-law requires upgrading of a *building*, the *Chief Building Official* may allow deviations from this By-law.

11.2.1.11. Specific Upgrade Requirements for Float Homes and Marinas

1) Except as permitted by Sentence (2), where a *marina* is altered, all new work shall comply with Subsection 12.2.2. and the *marina* shall be upgraded to an *acceptable* level as determined by the Upgrade Mechanism Model in Notes to Part 11.

2) Except as required by Sentence (3); Sentences 12.2.2.7.(1), and 12.2.2.8.(1) need not apply to a *marina*.

3) Where the total construction value of an alteration to a marina exceeds 50% of the replacement value of the marina as determined at the application stage for alteration, then the marina shall comply with Subsection 12.2.2.

4) Where a *float home* is altered

- a) new work shall comply with Subsection 12.2.2. of Division B and this By-law, and
- b) the *float home* shall be upgraded to an *acceptable* level in accordance with Article 11.2.1.4.

5) A *marina* shall have an *occupancy* classification as specified in Sentences 12.2.2.1.(4) and (5).

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