CITY OF BELLEVUE, WASHINGTON

ORDINANCE NO. 6782

AN ORDINANCE repealing Chapter 23.11 of the Bellevue City Code and adopting a new Chapter 23.11 of the Bellevue City Code in order to adopt the 2021 International Fire Code with amendments; providing for severability; and establishing an effective date.

WHEREAS, RCW 19.27.031 expressly requires the City of Bellevue adopt state building, residential, mechanical, fire, plumbing and related uniform codes; and

WHEREAS, RCW 19.27.060 provides the City with authority to amend the codes enumerated in RCW 19.27.031 as they apply within the City's corporate boundaries, provided such modifications do not result in less than the minimum performance standards and objectives contained in the uniform codes; and

WHEREAS, current provisions of the Bellevue City Code adopt and rely upon various state and national codes, which have been superseded by statewide amendments (2021 editions) that will become effective on March 15, 2024; and

WHEREAS, the 2021 amendments to the national and state codes necessitate corollary amendments to the Bellevue City Code; now, therefore

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES ORDAIN AS FOLLOWS:

SECTION 1. Ordinance 6532, Ordinance 6534 and Chapter 23.11 of the Bellevue City Code are hereby repealed in their entirety and replaced with a new Chapter 23.11 effective March 15, 2024, or such later date as the statewide adoption of the 2021 International Fire Code goes into full force and effect.

SECTION 2. Chapter 23.11 of the Bellevue City Code shall thereafter read as follows:

23.11.100 Adoptions – International Fire Code and International Wildland-Urban Interface Code.

23.11.102.5 International Fire Code Section 102.5 amended – Application of residential code.

23.11.102.7 International Fire Code Section 102.7 amended – Referenced codes and standards.

23.11.104.1 International Fire Code Section 104.1 amended – Authority of the chief and the fire department.

23.11.104.1.1 International Fire Code Section 104.1.1 added – Indigent housing guidelines.

23.11.104.12.2 International Fire Code Section 104.12.2 amended – Obstructing operations.

23.11.105.2.3 International Fire Code Section 105.2.3 amended – Time limitation of application.

23.11.105.3.1 International Fire Code Section 105.3.1 amended – Expiration.

23.11.105.5.9 International Fire Code Section 105.5.9 amended – Compressed Gases.

23.11.105.5.18 International Fire Code Section 105.5.18 amended – Flammable and combustible liquids.

23.11.105.5.32 International Fire Code Section 105.5.32 amended – Mobile food preparation vehicles.

23.11.105.5.38 International Fire Code Section 105.5.38 amended – Outdoor assembly event.

23.11.105.5.53 International Fire Code Section 105.5.53 added – Positive alarm sequence.

23.11.105.6 International Fire Code Section 105.6 amended – Required construction permits.

23.11.106.6.25 International Fire Code Section 105.6.25 added – Refrigeration Equipment

23.11.105.6.26 International Fire Code Section 105.6.26 added – Firefighter air systems.

23.11.107 International Fire Code Section 107 amended – Fees.

23.11.109.3 International Fire Code Section 109.3 amended – Recordkeeping.

23.11.109.6 International Fire Code Section 109.6 amended – Overcrowding.

23.11.111 International Fire Code Section 109 amended – Appeals.

23.11.112.1 International Fire Code Section 112 amended – Violations.

23.11.112.4.1 International Fire Code Section 112.4.1 amended – Abatement of violations.

23.11.202 International Fire Code Section 202 amended – Definitions.

23.1.304.1.2 International Fire Code Section 304.1.2 amended – Vegetation

23.11.307 International Fire Code Section 307 amended – Open Burning, Recreational Fires and Portable Outdoor Fireplaces.

23.11.315.3.2.1 International Fire Code Section 315.3.2.1 added – Storage under stairways.

23.11.324 International Fire Code Section 324 added – Road tunnels, bridges and other limited access highways.

23.11.403.12 International Fire Code Section 403.12 added – Building Information Card.

23.11.503.1 International Fire Code Section 503.1 amended – Where required.

23.11.503.2 International Fire Code Section 503.2 amended – Specifications.

23.11.503.3 International Fire Code Section 503.3 amended – Marking.

23.11.503.4 International Fire Code Section 503.4 amended – Obstruction of fire apparatus access roads.

23.11.503.6 International Fire Code Section 503.6 amended – Security gates.

23.11.505 International Fire Code Section 505 amended – Premises Identification.

23.11.507.1 International Fire Code Section 507.1 amended – Required water supply.

23.11.507.3 International Fire Code Section 507.3 amended – Fire flow.

23.11.507.5.1 International Fire Code Section 507.5.1 amended – Where required.

23.11.507.5.3 International Fire Code Section 507.5.3 amended – Private fire service mains and water tanks.

23.11.508.1.2 International Fire Code Section 508.1.2 amended – Separations and penetrations.

23.11.510 International Fire Code Section 510 amended – Emergency responder communication coverage.

23.11.602 International Fire Code Section 602 amended – Definitions

23.11.604.8 International Fire Code Section 604.8 added – Elevator Maintenance

23.11.901.11 International Fire Code Section 901.11 added – Preventable responses to fire alarms.

23.11.901.12 International Fire Code Section 901.12 added – Silencing and Resetting Fire Alarms.

23.11.903.2.11.8 International Fire Code Section 903.2.11.8 amended - Buildings exceeding 10,000 square feet.

23.11.903.3.1 International Fire Code Section 903.3.1 amended – Standards.

23.11.903.3.1.1.1 International Fire Code Section 903.3.1.1.1 amended – Exempt locations.

23.11.903.3.1.1.2 International Fire Code Section 903.3.1.1.2 amended – Bathrooms.

23.11.903.3.1.1.3 International Fire Code Section 903.3.1.1.3 added – Seismic coefficient.

23.11.903.3.1.2 International Fire Code Section 903.3.1.2 amended – NFPA 13R sprinkler systems.

23.11.903.3.9 International Fire Code Section 903.3.9 added – Fire Sprinkler Zones.

23.11.903.4.3 International Fire Code Section 903.4.3 amended – Floor control valves.

23.11.903.5 International Fire Code Section 903.5 amended – Testing and maintenance.

23.11.905.3.1 International Fire Code Section 905.3.1 amended – Height.

23.11.905.3.9 International Fire Code Section 905.3.9 added – High-rise building standpipes.

23.11.905.3.10 International Fire Code Section 905.3.10 added – Vertical standpipes served by fire pumps.

23.11.905.4 International Fire Code Section 905.4 amended – Location of Class I standpipe hose connections.

23.11.905.8 International Fire Code Section 905.8 amended – Dry standpipes.

23.11.907.1 International Fire Code Section 907.1 amended – General.

23.11.907.2.13.1.1 International Fire Code Section 907.2.13.1.1 amended – Area smoke detection.

23.11.907.2.13.2 International Fire Code Section 907.2.13.2 amended – Fire department communication system.

23.11.907.2.18.1 International Fire Code Section 907.2.18.1 amended – Smoke detectors.

23.11.907.5.2.1.1 International Fire Code Section 907.5.2.1.1 amended – Average sound pressure.

23.11.907.5.2.2.5 International Fire Code Section 907.5.2.2.5 amended – Standby power.

23.11.907.5.2.2.6 International Fire Code Section 907.5.2.2.6 - Phased evacuation.

23.11.907.6.3.1 International Fire Code Section 907.6.3.1 amended – Annunciation.

23.11.909.10.2 International Fire Code Section 909.10.2 amended – Ducts.

23.11.909.10.3 IFC Section 909.10.3 amended – Equipment, inlets and outlets.

23.11.909.11 IFC 909.11 amended – Standby power.

23.11.909.12 International Fire Code Section 909.12 amended – Detection and control systems.

23.11.909.18.8.3.2 International Fire Code Section 909.18.8.3.2 amended – Certificate of compliance.

23.11.909.21.3 International Fire Code Section 909.21.3 amended – Ducts for system.

23.11.909.21.4.4 International Fire Code Section 909.21.4.4 amended – Fan capacity.

23.11.912.5 International Fire Code Section 912.5 amended – Signs.

23.11.913.1 International Fire Code Section 913.1 amended – General.

23.11.913.2 International Fire Code Section 913.2 amended – Protection against interruption of service.

23.11.914.2.1 International Fire Code Section 914.2.1 amended – Automatic sprinkler system – Covered and open mall buildings.

23.11.914.3.1 International Fire Code Section 914.3.1 amended – Automatic sprinkler system – High-rise buildings.

23.11.914.3.1.3 International Fire Code Section 914.3.1.3 added – High-rise building sprinkler system design.

23.11.914.3.2 International Fire Code Section 914.3.2 amended – Secondary water supply.

23.11.919 International Fire Code Section 919 added – Firefighter air replenishment systems.

23.11.1008.3.4 International Fire Code Section 1008.3.4 amended – Duration.

23.10.1010.1.6 International Fire Code Section 1010.1.6 amended – Thresholds.

23.11.1011.12.2 International Fire Code Section 1011.12.2 amended – Roof access.

23.11.1026.6 International Fire Code Section 1026.6 added – Fire Alarm and Sprinkler Zones.

23.11.1103.2 International Fire Code Section 1103.2 amended – Emergency responder communication in existing buildings.

23.11.1103.11 International Fire Code Section 1103.11 added – Building information card.

23.11.1107 International Fire Code Section 1107 added – Premises identification.

23.11.1203.1 International Fire Code Section 1203.1 amended – Emergency and standby power systems.

23.11.2306.2.3 International Fire Code Section 2306.2.3 amended – Above-ground tanks located outside, above grade.

23.11.3303.7 International Fire Code 3303.7 amended – Job shacks and other temporary structures.

23.11.3303.8 International Fire Code 3303.8 amended – Additional Requirements for wood-frame buildings more than 50,000 sf. in area.

23.11.5003.9 International Fire Code Section 5003.9 amended – General safety.

23.11.5003.9.11 International Fire Code Section 5003.9.11 added – Manufacturer's limitations.

23.11.5307.3 International Fire Code Section 5307.3 amended – Insulated liquid carbon dioxide or nitrogen system used in beverage dispensing applications.

23.11.5601.2.2 International Fire Code Section 5601.2.2 amended – Sale and retail display.

23.11.5601.2.3 International Fire Code Section 5601.2.3 amended – Permit restrictions.

23.11.5601.9 International Fire Code Section 5601.9 added – Violations and penalties.

23.11.5608.2 International Fire Code Section 5608.2 amended – Fireworks discharge prohibited.

23.11.5608.2.3 International Fire Code Section 5608.2.3 added – Standards for fireworks displays.

23.11.5704.2.7.2 International Fire Code Section 5704.2.7.2 amended – Pressure limitations for tanks.

23.11.5704.2.9.6.1 International Fire Code Section 5704.2.9.6.1 amended – Locations where above-ground tanks are prohibited or restricted.

23.11.5704.2.13 International Fire Code Section 5704.2.13 amended – Abandonment and status of tanks.

23.11.5707 International Fire Code Section 5707 amended – On-Demand Mobile Fueling Operations.

23.11.6104.2 International Fire Code Section 6104.2 amended – Maximum capacity.

23.11.100 Adoptions – International Fire Code and International Wildland-Urban Interface Code.

The International Fire Code, 2021 Edition, and Appendices B and C, all published by the International Code Council, as adopted by the State Building Code Council in Chapter 51-54A WAC, and as amended, added to or excepted in this chapter, and not including International Fire Code Sections 905.3.4, 905.3.4.1, 907.2.7.1, and 907.2.13.2, are adopted by reference thereto as though fully set forth herein and shall be applicable within the city. In addition, the International Wildland-Urban Interface Code, 2021 Edition, published by the International Code Council and as adopted by the State Building Code Counsel in Chapter 51-55 WAC is adopted by reference thereto as though fully set forth herein and shall be applicable within the city. Not less than one copy of such codes, appendices and standards, in the form in which they were adopted, shall be filed in the city clerk's office and shall be available for use and examination by the public. As used in this code the designation [WS] indicates a Washington State amendment to the International Fire Code and the International Wildland-Urban Interface Code.

23.11.102.5 International Fire Code Section 102.5 amended – Application of residential code.

Section 102.5 of the International Fire Code is hereby amended to read as follows:

102.5 Where structures are designed and constructed in accordance with the International Residential Code, the provisions of this code shall apply as follows:

1. Construction and design provisions of this code pertaining to the exterior of the structure shall apply including, but not limited to, premises identification, fire apparatus access and water supplies. Where interior or exterior systems or devices are installed, construction permits required by Section 105.6 of this code shall apply.

   Exception: Additions to existing structures of up to 500 square feet for other than adult family homes are not required to comply with fire apparatus access or water supply requirements.

For other than adult family homes, additions greater than 500 square feet are allowed, provided the following criteria are met:

1. When there is inadequate fire department access (Section 503), distance to fire hydrants and/or inadequate fire flow (Section 507) and a proposed addition to a dwelling is less than 25% of the existing total living area square footage, interconnected carbon monoxide and smoke alarm devices shall be installed in accordance with Section 907.2.11.2 and International Residential Code Section 315.1 throughout the dwelling.

2. When there is inadequate fire department access (Section 503), distance to fire hydrants and/or inadequate fire flow (Section 507) and a proposed addition to a dwelling is greater than 25% but less than 50% of the existing total living area, interconnected carbon monoxide and smoke alarm devices* shall be installed in accordance with Section 907.2.11.2 and the International Residential Code Sections 314 and 315 throughout the dwelling and monitored by an *approved* central station provided there is a minimum available fire flow of 1,000 G.P.M. If the available fire flow is less than 1,000 G.P.M., item #3 shall apply.

3. When there is inadequate fire department access (Section 503), distance to fire hydrants and/or inadequate fire flow (Section 507) and a proposed addition to a dwelling is greater than 50% of the existing total living area an automatic fire sprinkler system shall be installed in accordance with NFPA standard 13D throughout the dwelling.

   *UL 217 listed wireless devices are *approved* for installation.

2. Administrative, operational and maintenance provisions of this code shall apply.

23.11.102.7 International Fire Code Section 102.7 amended – Referenced codes and standards.

Section 102.7 of the International Fire Code is hereby amended to read as follows:

102.7 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Chapter 80 of the International Fire Code, and such codes and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections 102.7.1 and 102.7.2.

Point of Information
When allowed by the *fire code official*, editions of standards not herein referenced may be utilized provided the entire standard is utilized.

102.7.1 Conflicts. Where conflicts occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

102.7.2 Provisions in referenced codes and standards. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code, the provisions of this code, as applicable, shall take precedence over the provisions in the referenced code or standard.

23.11.104.1.1 International Fire Code Section 104.1.1 added – Indigent housing guidelines.

Section 104 of the International Fire Code is hereby amended by the addition of a new subsection 104.1.1 to read as follows:

104.1.1 Indigent housing guidelines. The *fire code official* is hereby authorized to develop a policy regarding application and exemption of construction codes for temporary homeless shelters in accordance with WAC 51-16-030 Exemptions for indigent housing guidelines, now or as hereafter amended.

23.11.104.12.2 International Fire Code Section 104.12.2 amended – Obstructing operations.

Section 104.12.2 of the International Fire Code is hereby amended to read as follows:

104.12.2 Obstructing operations. Persons shall not obstruct the operations of the fire department in connection with extinguishment, investigation, or control of any fire, or actions relative to other emergencies, or disobey any lawful command of the fire chief or officer of the fire department in charge of the emergency, or any part thereof, or any lawful order of a police officer assisting the fire department.

23.11.105.2.3 International Fire Code Section 105.2.3 amended – Time limitation of application.

Section 105.2.3 of the International Fire Code is hereby amended to read as follows:

105.2.3 Time limitation of application.

1. Applications for which no permit is issued within one year following the date of application shall expire. Plans and other data submitted with the application may thereafter be returned to the applicant or destroyed in accordance with state law by the *fire code official*. The *fire code official* may, prior to expiration, extend the time for action by the applicant for a period not to exceed 180 days.

2. Applications may be canceled for inactivity if an applicant fails to respond to the department's written request for revisions, corrections, actions or additional information within 90 days of the date of request. The *fire code official* may extend the response period beyond 90 days if, within the original 90-day time period, the applicant provides and subsequently adheres to an *approved* schedule with specific target dates for submitting the full revisions, corrections or other information needed by the department.

3. In addition to the extension allowed in subsection (1) of this section, the *fire code official* may extend the life of an application if any of the following conditions exist:

a. Compliance with the State Environmental Policy Act is in progress; or

b. Any other city review is in progress; provided the applicant has submitted a complete response to city requests or the *fire code official* determines that unique or unusual circumstances exist that warrant additional time for such response, and the *fire code official* determines that the review is proceeding in a timely manner toward final city decision; or

c. Litigation against the city or the applicant is in progress, the outcome of which may affect the validity, or the provisions of any permit issued pursuant to such application.

In no event may the *fire code official* extend the application for a period of more than 180 days following the conclusion of any of the conditions described in subsection (3).

23.11.105.3.1 International Fire Code Section 105.3.1 amended – Expiration.

Section 105.3.1 of the International Fire Code is hereby amended to read as follows:

105.3.1 Expiration. An operational permit shall remain in effect until reissued, renewed, or revoked or for such a period of time as specified in the permit.

Construction permits issued by the *fire code official* under the provisions of this chapter shall expire by limitation and become null and void if the work authorized by such permit is not commenced within one year from the date of such permit, or if work authorized by such permit is suspended or abandoned at any time after the work is commenced for a period of 180 days except that the *fire code official* may extend permits associated with single-family construction for an additional period of up to 180 days at his or her sole discretion.

Construction permits issued under which work is continuously performed and the necessary periodic inspections are completed shall be extended beyond the one-year period by the *fire code official* for a period of no more than one year. No more than two one-year extensions shall be granted except that the *fire code official* may extend permits associated with single-family construction for an additional period of up to 90 days at his or her sole discretion.

Before such work recommences, a new permit shall be first obtained. Permits are not transferable and any change in occupancy, operation, tenancy or ownership shall require that a new permit be issued.

23.11.105.5.9 International Fire Code Section 105.5.9 amended – Compressed Gases.

Section 105.5.9 of the International Fire Code is hereby amended to read as follows:

105.5.9 Compressed gases. An operational permit is required for the storage, use or handling at *normal temperature and pressure* (NTP) of *compressed gases* in excess of the amounts listed in Table 105.5.9.

Exception: Vehicles equipped for and using *compressed gas* as a fuel for propelling the vehicle.

TABLE 105.5.9
PERMIT AMOUNTS FOR COMPRESSED GASES

TYPE OF GAS	AMOUNT (cubic feet at NTP)
Carbon dioxide used in carbon dioxide enrichment systems	875 (100 lbs.)
Carbon dioxide or nitrogen used in insulated liquid carbon dioxide beverage dispensing, food or beverage applications	875 (100 lbs.)
Corrosive	200
Flammable (except cryogenic fluids and liquefied petroleum gases)	200
Highly toxic	Any Amount
Inert and simple asphyxiant	6,000
Oxidizing (including oxygen)	504
Pyrophoric	Any Amount
Toxic	Any Amount

For SI: 1 cubic foot – 0.02832 m^3.

23.11.105.5.18 International Fire Code Section 105.5.18 amended - Flammable and combustible liquids.

Section 105.5.18 of the International Fire Code is hereby amended to read as follows:

An operational permit is required:

1. To use or operate a pipeline for the transportation within facilities of flammable or combustible liquids. This requirement shall not apply to the off-site transportation in pipelines regulated by the Department of Transportation (DOT) nor does it apply to piping systems.

2. To store, handle or use Class I liquids in excess of 5 gallons (19 L) in a building or in excess of 10 gallons (37.9 L) outside of a building, except that a permit is not required for the following:

2.1. The storage or use of Class I liquids in the fuel tank of a motor vehicle, aircraft, motorboat, mobile power plant or mobile heating plant, unless such storage, in the opinion of the *fire code official*, would cause an unsafe condition.

2.2. The storage or use of paints, oils, varnishes or similar flammable mixtures where such liquids are stored for maintenance, painting or similar purposes for a period of not more than 30 days.

3. To store, handle or use Class II or Class IIIA liquids in excess of 25 gallons (95 L) in a building or in excess of 60 gallons (227 L) outside a building, except for fuel oil used in connection with oil-burning equipment.

4. To store, handle or use Class IIIB liquids in tanks or portable tanks for fueling motor vehicles at motor fuel-dispensing facilities or where connected to fuel-burning equipment.

Exception: Fuel oil and used motor oil used for space heating or water heating.

5. To remove Class I or II liquids from an underground storage tank used for fueling motor vehicles by any means other than the *approved*, stationary on-site pumps normally used for dispensing purposes.

6. To operate tank vehicles, equipment, tanks, plants, terminals, wells, fuel-dispensing stations, refineries, distilleries and similar facilities where flammable and combustible liquids are produced, processed, transported, stored, dispensed or used.

7. To place temporarily out of service (for more than 90 days) an underground, protected above-ground or above-ground flammable or combustible liquid tank.

8. To change the type of contents stored in a flammable or combustible liquid tank to a material that poses a greater hazard than that for which the tank was designed and constructed.

9. To manufacture, process, blend or refine flammable or combustible liquids.

10. To engage in the dispensing of liquid fuels into the fuel tanks of motor vehicles at commercial, industrial, governmental or manufacturing establishments in accordance with Section 5706.5.4.

11. To utilize a site for the dispensing of liquid fuels from tank vehicles into the fuel tanks of motor vehicles, marine craft and other special equipment at commercial, industrial, governmental or manufacturing establishments in accordance with Section 5706.5.4.

23.11.105.5.32 International Fire Code Section 105.5.32 amended – Mobile food preparation vehicles.

Section 105.5.32 of the International Fire Code is hereby amended to read as follows:

[W] 105.5.32 Mobile food preparation vehicles. A permit is required for mobile food preparation vehicles equipped with appliances that produce smoke or grease-laden vapors or utilize LP-gas systems or CNG systems.
Valid operational permits issued by a participating fire agency may be recognized provided that the vehicle and appliances are maintained in accordance with conditions of the permit.

23.11.105.5.38 International Fire Code Section 105.5.38 amended – Outdoor assembly event.
Section 105.5.38 of the International Fire Code is hereby amended to read as follows:
105.5.38 Outdoor assembly event. An operational permit is required to conduct an outdoor assembly event where planned attendance exceeds 1,000 persons.

Point of Information
In addition please see requirements set forth by the City's special events committee and Bellevue City Code Chapter 14.50, the Special Events code. These resources can be found on the City's website.

23.11.105.5.53 International Fire Code Section 105.5.53 added – Positive alarm sequence.

Section 105.5 of the International Fire Code is hereby amended by the addition of a new subsection 105.5.53 to read as follows:

105.5.53 Positive alarm sequence. An operational permit is required to operate a PAS (Positive Alarm Sequence) Account as prescribed in NFPA (National Fire Protection Association) 72.

23.11.105.6 International Fire Code Section 105.6 amended – Required construction permits.

Section 105.6 of the International Fire Code is hereby amended to read as follows:

Permits referenced in Section 105.6 are issued by the Development Services Department when authorized to do so by the *fire code official*.

23.11.105.6.26 International Fire Code Section 105.6.26 added – Refrigeration Equipment

Section 105.6.26 of the International Fire Code is hereby added to read as follows:

105.6.26 Refrigeration Equipment. A construction permit is required to install a mechanical refrigeration unit or system regulated by Chapter 6 of the International Fire Code.

23.11.105.6.27 International Fire Code Section 105.6.27 added – Firefighter air systems.

Section 105.6.27 of the International Fire Code is hereby added to read as follows:

105.6.27 Firefighter Air Systems. A construction permit is required to install a firefighter air system.

23.11.107 International Fire Code Section 107 amended – Fees.

Section 107 of the International Fire Code is hereby amended to read as follows:

107.1 Fees. A permit shall not be issued until the fees have been paid, nor shall an amendment to a permit be released until the additional fee, if any, has been paid.

107.2 Schedule of permit fees. A fee for each permit shall be paid as required, in accordance with Section 107.6.

These fees shall be reviewed annually, and, effective January 1 of each year, administratively increased or decreased to the nearest whole dollar by an adjustment to reflect the current published annual change in the Seattle Consumer Price Index for Wage Earners and Clerical Workers – June to June timeframe. This does not apply to the Inspection Fee (23.11.107.6.9) which is to be reviewed and adjusted by City Council every two years at the beginning of every even year.

A fee schedule (Fire Prevention Fee Schedule) reflecting the base fees in Section 107.6 and any applicable administrative adjustment pursuant to this section will be made available to the public.

107.3 Work commencing before permit issuance. Any person who commences any work, activity or operation regulated by this code before obtaining the necessary permits shall reimburse the City for all expenses related to any enforcement

proceedings and be subject to a penalty levied in an amount up to double the fee required for the work, activity or operation commenced prior to obtaining the necessary permits which shall be in addition to the required permit fees.

This provision does not apply to emergency work, activity or operations when it is proved to the satisfaction of the Fire Marshal that such work, activity or operation was urgently necessary and that it was not practical to obtain a permit before commencement of the work, activity or operation.

In all such cases, a permit must be obtained as soon as it is practical to do so; and if there is an unreasonable delay in obtaining the permit, a double fee (as provided for in this ordinance) will be charged. The payment of this double fee does not relieve any person from fully complying with the requirements of the Bellevue City Code in the execution of the work or from any other penalties prescribed by law. Such person may also be required to reimburse the City for all expenses related to any enforcement proceedings as determined by the *fire code official*.

107.4 Related fees. The payment of the fee for the construction, alteration, removal or demolition of work done in connection to or concurrently with the work or activity authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.

107.5 Refunds. The applicable governing authority is authorized to establish a refund policy.

Section107.6 Fees.

107.6.1 Operational permit fees. A fee of $149.00, subject to adjustment as specified in BCC 23.11.107.2, shall be charged annually for each type of operational permit (as defined in International Fire Code Section 105.5).

Exceptions:

1. Tenants requiring multiple operational permits in the same building shall be charged only one operational permit fee per calendar year.

2. No fees shall be charged for candles in a place of assembly or parade floats.

3. Fees shall be waived for:

    1. Government agencies
    2. Non-profit organizations exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code.

107.6.2. Pyrotechnical effects permits. A base fee of $272.00, subject to adjustment as specified in BCC 23.11.107.2, shall be charged for pyrotechnical effects permits.

107.6.3 Construction permit fees. The fee for each permit shall be as set forth in the fee ordinance, as now or hereafter amended.

107.6.4 Re-inspection fee. A re-inspection fee may be assessed when all of the following criteria have been met:

- Code violations have been identified by the *fire code official.*
- A written notice has been issued to the responsible party, identifying the code violations and a time period to make corrections.
- The code violations have not been corrected within the specified period.

The fee shall be $190.00/hour, subject to adjustment as specified in BCC 23.11. 107.2, with a one hour minimum.

107.6.5 Event Fee. When the fire chief determines it is necessary to preserve the public health, safety and welfare, event sponsors may be required to compensate the department for staffing and equipment in an amount calculated according to the Washington State Fire Chiefs Association's fee schedule together with Fire Prevention hourly staffing rate as published in Development Services Fee Ordinance 6692 or as amended.

107.6.6 Confidence Test Report Filing Fee. Confidence test reports must be filed with "The Compliance Engine" (www.thecomplianceengine.com). A $25.00 filing fee remitted to Brycer L.L.C is required at the time of filing. Brycer L.L.C will retain $10.00 and 6% of the total filing fee and return the balance to the City of Bellevue to partially offset an incremental increase in staffing required to fully implement this program.

107.6.6.1 Late Report Filing Fee. Confidence test reports that are not filed within five business days of the inspection or maintenance completion are subject to an additional $10.00 fee in accordance with BCC 23.11.109.3.1

107.6.7 Insufficient Funds. Any applicant whose payment of fees is returned to the City for Non-Sufficient Funds, or whose credit card payment is denied, will be charged the City standard insufficient funds fee. The original fees and the returned check fee are due and payable within five (5) working days of notification.

107.6.8 Late Fee. All balances 30 days or greater past the invoice date are assessed a late charge of 1%, with a minimum charge of $25 per month.

107.6.9 Inspection fee. The *fire code official* is authorized to assess a fire inspection fee for inspections made of commercial and multifamily buildings under International Fire Code Chapter 1, Section 104. The fire inspection fee shall be assessed at the time the inspection is made. The fire chief or their designee shall calculate the inspection fee based on the following formula for each building or occupancy:

(Square Foot Factor)* multiplied by (Occupancy Factor)** multiplied by (Base Rate)*** = Inspection Fee

The Square Foot Factor and Occupancy Factor shall be determined by the *fire code official*. The Base Rate shall be set by city council.

107.6.9.1 Square Foot Factor. The *Square Foot Factor shall be determined as follows:

#0 = Under 1,000 Sq. Ft.
#1 = 1,000 Sq. Ft. or larger up to;
#2 = 3,000 Sq. Ft. or larger up to;
#3 = 10,000 Sq. Ft. or larger up to;
#4 = 40,000 Sq. Ft. or larger up to;
#5 = 80,000 Sq. Ft. or larger up to;
#6 = 100,000 Sq. Ft. or larger.

107.6.9.1.1 Covered Mall Buildings. The square footage for *Covered Mall Buildings* shall not include *anchor buildings,* which will be assessed separately. *For Covered Mall Building* 500,000 sq. ft or larger the square footage factor shall be as follows:

#7= 500,000 Sq. Ft. or larger up to;
#8 = 750,000 Sq. Ft. or larger up to;
#9 = 1,000,000 Sq. Ft. or larger.

107.6.9.2 Occupancy Factor. The ** Occupancy Factor shall be determined as follows:

.1 *Group R* Townhomes & single-story *Group S* self-storage warehouses.

.3 Group R Buildings not exceeding 3 stories in height; Group S Self-storage warehouses not exceeding 3 stories in height; Group S stand-alone parking garages and covered boat moorage.

1.0 All buildings or portions of buildings classified as Group A Division 3, B, M, R (not to include Group R Division 3) and U occupancies.

2.0 All buildings or portions of buildings classified as Group A Division 1, 2 and 4, E, S or LC occupancies.

3.0 All buildings classified as high-rise buildings; all covered mall buildings not to include anchor buildings; all buildings or portions of buildings classified as Group F, H or I occupancies.

107.6.9.2.1 High-Rise Buildings with common podiums. When multiple High-Rise buildings are located above a common podium, the associated parking garage and podium areas shall be assigned an occupancy factor of 2 and treated as one building.

107.6.9.2.2 Mixed Occupancy Buildings. All occupancy classifications are in accordance with the International Building Code (IBC) as amended by Chapter 51-50 WAC. Mixed occupancy buildings shall be classified for the purpose of the occupancy factor based upon the predominate occupancy of the building by square footage.

107.6.9.3 Base Rate. *** Base Rate = $180.00.

107.6.10 Maximum Fee. Where multiple buildings have a single owner and comprise a single complex, the maximum fee for a single complex containing *Group E or R occupancies* that do not exceed 4 stories in height shall be $3,240.00.

107.6.11 Exemptions from inspection fee. Buildings owned by nonprofit organizations exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code, buildings owned by the federal government, and buildings less than 1,000 square feet are exempt from the fire inspection fees established in BCC 23.11.107.6.9. This exemption does not apply to nonprofit organizations when a majority of the building is occupied by tenants not exempt from federal income tax under Section 501(c)(3).

107.6.12 Reinspection and special inspections. The fire inspection fee shall cover the initial inspection and one follow-up visit, if necessary, to determine correction of any violations. Any additional follow-up inspections necessitated by noncompliance or inspections for which no fee is specifically indicated, shall be assessed a fee at the time of the inspection and at the rates established in BCC 23.11.107.6.4.

107.6.13 Adjustment to base rate. The base rate used in BCC 23.11.107.6.9.3 shall be set by the City Council and reviewed in 2024 and every two years thereafter, or as otherwise necessary, to accomplish cost recovery for the fire inspection program. The base rate shall be adjusted to account for inflation, additional commercial and multifamily square footage subject to fire inspection which has been added within the city, and additional fire inspection resources or personnel necessary to perform fire inspections on a regular basis.

107.6.14 Inspection fee – Payment obligation. The obligation to pay the fee assessed pursuant to BCC 23.11.107.6.9 or 23.107.6.12 shall be the responsibility of the building or complex owner.

107.6.15 Inspection fee – Collection procedure. The fees established in BCC 23.11.107.6.9 and BCC 23.11.107.6.12 shall be billed to the party responsible. All balances 30 days or greater past the date of original assessment shall incur late charges pursuant to BCC 23.11.107.6.8.

The director of finance and asset management, or their designee, may use any lawful means to collect the balance or write off the obligation.

23.11.109.3 International Fire Code Section 109.3 amended – Recordkeeping.

Section 109.3 International Fire Code is hereby amended to read as follows:

109.3 Recordkeeping. A record of periodic inspections, test, servicing and other operations and maintenance shall be maintained on the premises or other *approved* location for not less than 3 years, or a different period of time where specified in this code or referenced standards. Records shall be made available for inspection by the *fire code official*, and a copy of the records shall be provided to the *fire code official* upon request.

The *fire code official* is authorized to prescribe the form and format of such recordkeeping. The *fire code official* is authorized to require that certain required records be filed with the *fire code official*.

Point of Information
All confidence test reports must be filed with the Compliance Engine (www.thecomplianceengine.com)

109.3.1 Timeliness of report filing. Fire/life safety system confidence test reports must be submitted within five business days of the inspection or maintenance completion. Systems with impairments or red-tagged systems must also be reported immediately using the current mandatory impaired systems reporting process. Reports that are not submitted in a timely manner are subject to an additional $10 fee for each late report.

23.11.109.6 International Fire Code Section 109.6 amended – Overcrowding.

Section 109.6 of the International Fire Code is hereby amended to read as follows:

109.6 Overcrowding. Overcrowding or admittance of any person beyond the *approved* capacity of a building or a portion thereof shall not be allowed. The *fire code official*, upon finding any overcrowding conditions or obstructions in aisles, passageways or other means of egress, or upon finding any condition which

constitutes a life safety hazard, shall be authorized to direct actions be taken to reduce the overcrowding or to cause the event to be stopped until such condition or obstruction is corrected.

23.11.111 International Fire Code Section 111 amended – Means Of Appeals.

Section 111 of the International Fire Code is hereby amended to read as follows:

111.1 Board of Appeals Established.

1. The City of Bellevue Hearing Examiner may hear appeals relating to the following:

   A. The *fire code official*'s denial of an application for an operational permit under Section 105 of the International Fire Code as adopted by this chapter and now or hereafter amended;

   B. The *fire code official*'s denial of an application for a construction permit under Section 105 of the International Fire Code as adopted by this chapter and now or hereafter amended;

   C. The determination by the *fire code official* that a nonexempt preventable fire department response to a fire alarm has occurred under BCC 23.11.901.11 as now or hereafter amended;

   D. Formal written interpretations of the fire code by the *fire code official*.

   E. Any violation of this chapter or the code, appendices or standards adopted herein or any failure to comply with any lawful order of the chief or his authorized representative prosecuted as a civil violation under Chapter 1.18 BCC.

2. The applicant in A or B above, the responsible party in C above, or an aggrieved party in D above, may appeal to the City of Bellevue Hearing Examiner within thirty days from the date of the *fire code official*'s determination. The *fire code official*'s determination shall be in writing and shall constitute the final decision of the City. Appeals of determinations made by the *fire code official* in proceedings authorized under Chapter 1.18 BCC shall be heard simultaneously with the underlying action before the hearing examiner presiding over the proceeding. Appeals based on E above are handled in accordance with Chapter 1.18 BCC.

23.11.112.1 International Fire Code Section 112 amended – Violations.

Section 112 of the International Fire Code is hereby amended to read as follows:

23.11.112.1 Violations.

A. Unless otherwise provided for herein, any violation of this chapter or the code, appendices or standards adopted herein or any failure to comply with any lawful order of the chief or his authorized representative may be prosecuted as a misdemeanor or may be treated as a civil violation under Chapter 1.18 BCC. The imposition of one penalty for any violation shall not excuse the violation or permit it to continue.

B. In addition to those costs and expenses listed in Chapter 1.18 BCC (Civil Violations), the city may recover costs from responsible persons, or business or property owners, for any of the following:

1. Suppression and investigation of incendiary fires where the responsible party has been duly convicted of causing the fire.

2. Suppression and investigation of fires resulting from or aggravated by a condition that was a code violation for which a violation notice, or letter of violation was issued, but not corrected.

3. Suppression and investigation of fires resulting from an escape of a control burn.

4. Extinguishment of an illegal control burn, or a control burn in violation of a permit where adequate private fire extinguishing capability has not been provided or where private fire extinguishing efforts have been unsatisfactory.

5. Repeat responses to situations involving illegal burning.

6. Mitigation of a hazardous materials incident when the duration of the incident exceeds two hours.

7. Preventable responses to fire alarms when the number exceeds five nonexempt preventable responses to a single alarm system during a calendar year. This shall be in addition to any fees assessed under BCC 23.11.901.11. The chief may credit costs of system improvement to prevent responses or other life safety improvements to offset charges for fire departmental costs.

8. Extraordinary expenses incurred in, or as a result of, the control or extinguishment of fires or mitigation of hazardous materials incidents.

9. Suppression and investigation of fires where the responsible party committed acts or omissions that constitute willful and wanton misconduct or gross negligence.

C. Chargeable costs under this section shall include the following:

1. Personnel costs (including salaries, overtime, fringe benefits, etc.) for the time that involved personnel were not available to respond to valid emergencies.

2. Apparatus costs according to the "Fee Schedule for Hazardous Materials Incidents and/or Fire Suppression" established by the King County Fire Chiefs' Association.

3. With regard to subsection (B)(8) of this section, costs may include damaged, destroyed or contaminated equipment (such as protective clothing and fire hose); special supplies utilized (such as fire-fighting foams and absorbent pads); and cost of specialized or heavy equipment and their operation including that of other fire agencies, other departments of the city of Bellevue and private contractors or suppliers when such equipment is determined to be needed by the chief.

4. Administrative and any other costs associated with the recovery of these costs.

23.11.112.4.1 International Fire Code Section 112.4.1 amended – Abatement of violations.

Section 112.4.1 of the International Fire Code is hereby amended to read as follows:

112.4.1 Abatement of violation. In addition to the enforcement provisions of 23.11.104, the *fire code official* is authorized to institute appropriate action to prevent unlawful construction or to restrain, correct or abate a violation; or to prevent illegal occupancy of a structure or premises; or to stop an illegal act, conduct of business or occupancy of a structure on or about any premises.

23.11.201.5 International Fire Code Section 201.5 amended -Terms used in this chapter.

Section 201.5 of the International Fire Code is hereby amended to include the following terms used in this chapter:

A. Terms used in this chapter and otherwise defined in Chapter 1.18 BCC shall have the meanings set forth in Chapter 1.18 BCC as now or hereafter amended.

B. Point of Information. Text marked "Point of Information" is for guidance only and does not have the force of law.

23.11.202 International Fire Code Section 202 amended – Definitions.

Section 202 of the International Fire Code is hereby amended to include the following amended and additional definitions:

Fire Code Official. Fire Marshal or the Fire Marshal's designee charged with the administration and enforcement of the code, or a duly authorized representative.

Frequency Licensing Authority. Eastside Public Safety Communications Agency (EPSCA), its successor agency – Puget Sound Emergency Radio Network (PSERN) and any future successor agency.

High-Rise Building. For definition of this term, see Washington State amendment to 2021 International Building Code Section 202 "High-Rise Building."

Portable Outdoor Fireplace. Devices which are held off the ground by legs or other supporting structures, are designed and intended to contain a fire, prevent burning material from leaving the container, and prevent the spread of embers or sparks.

Power Tap. A listed device for indoor use consisting of an attachment plug on one end of a flexible cord and two or more receptacles on the opposite end equipped with overcurrent protections.

Standby Power System. All references to standby power systems shall mean legally required power systems, in accordance with the *Washington Cities Electrical Code*, and Chapter 27 of the International Building Code as adopted, providing a source of automatic electric power of a required capacity and duration to operate required building, hazardous materials or ventilation systems in the event of a failure of the primary power. Legally required standby power systems are required for electrical loads where interruption of the primary power could create hazards or hamper rescue or fire-fighting operations.

Water Supply. The source and delivery system supplying the required flow (gpm) and pressure (psi) to a sprinkler system or other fire protection system/equipment.

23.11.304.1.2 International Fire Code Section 304.1.2 amended – Vegetation

Section 304.1.2 of the International Fire Code is hereby amended to read as follows:

Weeds, grass, vines or other growth that is capable of being ignited and endangering property, shall be cut down and removed by the *owner* or occupant on building lots that are either open or contain an occupied or vacant dwelling.

Point of Information

Refer to Public Information Sheet F-14 for additional information

23.11.307 International Fire Code Section 307 amended – Open Burning, Recreational Fires and Portable Outdoor Fireplaces

Section 307 of the International Fire Code is hereby amended to read as follows:

307.1 General. A person shall not kindle or maintain or authorize to be kindled or maintained any fire unless conducted in accordance with Sections 307.1.1. through 307.6.1

307.1.1 Prohibited open burning. Open burning shall be prohibited at all times in compliance with a permanent ban on open burning established by the Puget Sound Clean Air Agency in September of 1992.

Exceptions:

1. Bonfires
2. Recreational Fires
3. Portable outdoor fireplaces

307.1.2 Bans on fires due to air quality or fire danger. If the Puget Sound Clean Air Agency issues a burn ban due to air quality, or if a fire safety burn ban is issued by the *fire code official*, all fires are prohibited. It is the responsibility of the property owner where the fire is to be conducted to ensure no such ban exists prior to kindling any fire.

Point of Information

For air quality and burn ban status information and regulations contact the Puget Sound Clean Air Agency at www.pscleanair.org or (206) 343-8800.

307.2 Permit required. A permit shall be obtained from the *fire code official* in accordance with Section 105.5 prior to conducting a bonfire. Application for such approval shall only be presented by and permit issued to the owner of the land upon which the fire is to be kindled.

A permit is not required for a recreational fire or portable outdoor fireplace.

307.3 Extinguishment authority. When any fire creates or adds to a hazardous situation, or a required permit has not been obtained, the *fire code official* is authorized to order the extinguishment of the fire.

307.4 Location. The location for fires shall be as follows:

307.4.1 Bonfires. A bonfire shall not be conducted within 50 feet (15 240 mm) of a structure or combustible material unless the fire is contained in a barbecue pit. Conditions that could cause a fire to spread within 50 feet (15 240 mm) of a structure shall be eliminated prior to ignition.

307.4.2 Recreational fires. Recreational fires shall not be conducted within 25 feet (7620 mm) of a structure or combustible material. Conditions that could cause a fire to spread within 25 feet (7620 mm) of a structure shall be eliminated prior to ignition.

307.4.3 Portable outdoor fireplaces. Portable outdoor fireplaces shall be used in accordance with the manufacturer's instructions and shall not be operated within 15 feet (3048 mm) of a structure or combustible material.

307.5 Attendance. Bonfires, recreational fires and use of portable outdoor fireplaces shall be constantly attended until the fire is extinguished. Not fewer than one portable fire extinguisher complying with Section 906 with a minimum 4-A rating or other *approved* on-site fire-extinguishing equipment, such as dirt, sand, water barrel, garden hose or water truck, shall be available for immediate utilization.

307.6 LPG containers. Portable outdoor barbecues using LPG on occupied roofs of Group R-2 occupancies shall be limited to use with LPG containers with a maximum capacity of 16.4 ounces (0.465 kg).

307.6.1 Cleaning. Portable outdoor barbecues shall be periodically cleaned by removing grease or fat accumulations from grills and in trays below the grill.

23.11.315.3.2.1 International Fire Code Section 315.3.2.1 added – Storage under stairways.

Section 315.3.2 of the International Fire Code is hereby amended by the addition of a new subsection 315.3.2.1 to read as follows:

315.3.2.1 Storage under stairways. Storage is prohibited under exit stairways.

Exception: Enclosures under stairways in accordance with Sections 1011.7.3 or 1011.7.4 as applicable.

23.11.324 International Fire Code Section 324 added – Road tunnels, bridges and other limited access highways.

Chapter 3 of the International Fire Code is hereby amended by the addition of a new Section 324 to read as follows:

SECTION 324

ROAD TUNNELS, BRIDGES AND OTHER LIMITED ACCESS HIGHWAYS

324.1 Road tunnels, bridges and other limited access highways. Road tunnels, bridges, and other limited access highways shall be in accordance with NFPA 502.

23.11.401.9 International Fire Code Section 401.9 added – Evacuation required.

Section 401 of the International Fire Code is hereby amended by the addition of a new subsection 401.9 to read as follows:

401.9 Evacuation required. In the event of activation of a fire, emergency alarm, or at the direction the *fire code official*, occupants of the building or portion of the building in which the alarm is activated shall make a safe and orderly evacuation out of the building, or as provided in the building's fire safety and evacuation or high-rise emergency operations plan.

Exceptions:

1. Where the occupant's physical or other disability make the occupant unable to evacuate without assistance and no assistance is immediately available; or

2. Where the presence of smoke, fire, structural collapse or other hazard or obstruction in the occupant's means of egress make evacuation unsafe.

23.11.403.12 International Fire Code Section 403.12 added – Building Information Card.

Section 403.12 of the International Fire Code is hereby amended by the addition of a new subsection 403.12 to read as follows:

403.12 Building information card. Buildings 10,000 square feet (139 m^2) or greater, or that are designated as a hazard by the *fire code official* shall develop an *approved* building information card in accordance with section 508.1.6.

Point of Information
Refer to Public Information Sheet F-72 for additional information.

23.11.503.1 International Fire Code Section 503.1 amended – Where required.

Section 503.1 of the International Fire Code is hereby amended to read as follows:

503.1 Where required. Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.3 and the City of Bellevue Transportation Department Design Standards and Manual.

503.1.1 Buildings and facilities. *Approved* fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45,720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an *approved* route around the exterior of the building or facility.

Exceptions: The *fire code official* is authorized to increase the distance:

1. Up to 200 feet where the building is equipped throughout with an *approved* automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.

2. Where fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an *approved* alternative means of fire protection is provided.

   Alternate means may include installation of stairs that extend to the roof, sprinkler system, fire alarm system, standpipes, smoke control system, ready access to fire service elevators and others (sometimes in combination) to mitigate the additional access distance.

3. There are not more than two Group R-3 or Group U occupancies.

503.1.2 Additional access. The *fire code official* is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

503.1.3 High-piled storage. Fire department vehicle access to buildings used for high-piled combustible storage shall comply with the applicable provisions of Chapter 32.

23.11.503.2 International Fire Code Section 503.2 amended – Specifications.

Section 503.2 of the International Fire Code is hereby amended to read as follows:

503.2 Specifications. Fire apparatus access roads shall be installed and arranged in accordance with Sections 503.2.1 through 503.2.8, and the City of Bellevue Transportation Department Design Standards and Manual.

503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6,096 mm), exclusive of shoulders, except as modified in the City of Bellevue Transportation Department Design Standards and Manual, and an unobstructed vertical clearance of not less than 13 ft. 6 in.

Exceptions:

1. Access roads serving not more than two Group R-3 or U occupancies shall have an unobstructed width of not less than 16 feet.

2. Public streets shall be in accordance with the City of Bellevue Transportation Department Design Standards and Manual.

3. When all structures served by the fire apparatus access roads are equipped with *approved* automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3 the *fire code official* may approve reduced widths.

503.2.2 Authority. The *fire code official* shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations.

503.2.3 Surface. Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all weather driving capabilities.

503.2.4 Turning radius. The required turning radius of a fire apparatus access road shall be 28 feet minimum inside curb and 48 feet minimum outside curb.

503.2.5 Dead ends. Dead-end fire apparatus access roads in excess of 150 feet (45,720 mm) in length shall be provided with a turnaround in accordance with the City of Bellevue Transportation Department Design Standards and Manual.

Exception: The *fire code official* is authorized to increase the length up to 300 feet (45,720 mm) for driveways serving only one Group R-3 occupancy.

503.2.6 Bridges and elevated surfaces. Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with the City of Bellevue Transportation Department Design Standards and Manual. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required by the *fire code official*. Where

elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, *approved* barriers, *approved* signs or both shall be installed and maintained when required by the *fire code official*.

503.2.7 Grade. The grade of the fire apparatus access road shall be in accordance with the City of Bellevue Transportation Department Design Standards and Manual. Access roads, including public and private roads and driveways shall comply with the following.

1. The grade of access for non-sprinklered properties shall not exceed 12%.

2. The grade of access for sprinklered properties shall not exceed 15%.

3. All grades of access in excess of 15% require approval by the fire department.

503.2.8 Angles of approach and departure. The angles of approach and departure for fire apparatus access roads shall be in accordance with the City of Bellevue Transportation Department Design Standards and Manual.

23.11.503.3 International Fire Code Section 503.3 amended – Markings.

Section 503.3 of the International Fire Code is hereby amended to read as follows:

503.3 Marking. Where required by the *fire code official* fire apparatus access roads shall be marked as follows:

1. FIRE LANE – NO PARKING Signs shall be mounted a minimum of 7' from bottom of the sign to the street or sidewalk. Signs must be a type "R8-31" or equivalent reflective sign no less than 12" x 18" in size, with a white background and the wording "No Parking Fire Lane" in red letters. When in a straight line of sight, these signs shall be no further than one hundred fifty feet (150') apart. This distance may be reduced when curves, corners, or other adverse sighting conditions restrict the line of sight.

2. Curbs along designated Fire Department Access Roads (Fire Lanes) shall also be painted red. This shall include both the vertical and horizontal portions of the curb. Minimum three-inch (3") white lettering which shall read: NO PARKING – FIRE LANE, shall be placed every fifty feet (50') or portion thereof on the vertical portion of the curb. The entire curb length shall be painted. If there are rolled curbs or no curbs, stenciling shall be placed on pavement.

   Where no curbs exists, stenciling shall be placed on the pavement with minimum 6" white block lettering on continuous 10" red background to read NO PARKING FIRE LANE at 50 foot intervals.

Exception: Variations to Fire Lanes markings may be *approved* when in the opinion of the *Fire code official* the proposed signage and markings achieve the same outcome. The *fire code official* retains the right to revoke the variations for cause.

Point of Information
See Public Information Sheet F-11 for additional information (http://www.bellevuewa.gov/pdf/Fire/F-11_FireLanes.pdf).

23.11.503.4 International Fire Code Section 503.4 amended – Obstruction of fire apparatus access roads.

Section 503.4 of the International Fire Code is hereby amended to read as follows:

503.4 Obstruction of fire apparatus access roads. Fire apparatus access roads shall not be obstructed in any manner, including parking of vehicles. The minimum widths and clearances established in Section 503.2.1 and 503.2.2 shall be maintained at all times.

503.4.1 Traffic calming devices. Traffic calming devices shall be prohibited unless *approved* by the *fire code official*.

503.4.2 Entrances. Entrances to roads, trails or other access ways which have been closed with gates and barriers in accordance with Section 503.5 shall not be obstructed by parked vehicles.

503.4.3 Towing notification. At each entrance to property where fire lanes have been designated, signs shall be posted in a clearly conspicuous location and shall clearly state that vehicles parked in fire lanes may be impounded, and the name, telephone number, and address of the towing firm where the vehicle may be redeemed.

503.4.4 Property owner responsible. The owner, manager or person in charge of any property upon which designated fire lanes have been established shall prevent the parking of vehicles or placement of other obstructions in such fire lanes.

503.4.5 Violation – civil violation. Any person who fails to mark or maintain the marking of a designated fire lane as prescribed in this chapter or who parks a vehicle in, allows the parking of a vehicle in, obstructs or allows the obstruction of a designated fire lane commits a civil violation. The monetary penalty shall be the same as for a class 1 civil infraction pursuant to the provisions of Chapter 7.80 RCW.

503.4.6 Impoundment. Any vehicle or object obstructing a designated fire lane, whether on public or private property, is hereby declared a hazard and may be abated without prior notification to its owner by impoundment pursuant to the applicable state law.

503.4.7. Authorization. The *fire code official* is authorized to take such lawful action, including impoundment or the writing and issuance of citations for civil infractions, as may be required to enforce the provisions of this section.

503.4.8 Obstructing a fire facility. It is hereby declared a violation of this section to stop, park a vehicle, or otherwise obstruct any fire station facility housing emergency response apparatus.

23.11.503.6 International Fire Code Section 503.6 amended – Security gates.

Section 503.6 of the International Fire Code is hereby amended to read as follows:

503.6 Security gates, Bollards or other Obstructions. The installation of security gates, bollards or other obstructions across a fire apparatus access road shall be reviewed and *approved* by the *fire code official*. The use of directional-limiting devices (tire spikes) is prohibited. Where security gates, bollards or other obstructions are installed, they shall have an *approved* means of emergency operation. The security gates, bollards or other obstruction and the emergency operation shall be maintained operational at all times.

Electric gate operators, where provided, shall be listed in accordance with UL 325.

Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200 and must be equipped with Click 2 Enter or other authorized equipment that allows for operation of the gate by Fire & Police personnel from their vehicle.

Exception: Single family residential buildings located 50' or less from edge of curb when access is provided via a Knox Box.

Gates shall be at a minimum as wide as the required access road width. Gates, bollards or other obstructions on commercial properties must be set back 30 ft. from roadway edge of pavement. Where a fence is provided on each side of a gate for a commercial property, a man door shall be provided at an *approved* location with a Knox key for access to the man door.

Exception: Automated gates equipped with Click 2 Enter or other authorized equipment that allows for operation of the gate by Fire and Police personnel from their vehicle are not required to be set back 30 ft. from the roadway edge of pavement provided the roadway is not an arterial, residential collector street or a

street with lane markers. And are not required to provide a Knox box to access man doors in fences.

23.11.505 International Fire Code Section 505 amended – Premises Identification.

Section 505 of the International Fire Code is hereby amended to read as follows:

505.1 Address identification. New and existing buildings shall be provided with *approved* address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches (102 mm) high with a minimum stroke width of 1/2 inch (12.7 mm). Where required by the *fire code official*, address identification shall be provided in additional *approved* locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the *public way*, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

505.2 Street or road signs. Streets and roads shall be identified with *approved* signs. Temporary signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles. Signs shall be of an *approved* size, weather resistant and be maintained until replaced by permanent signs.

Point of Information
Streets and addresses to include floor numbers and unit/suite numbers shall be in accordance with Bellevue City Code 14.02 and any associated policy as currently exists or hereafter amended.

23.11.507.1 International Fire Code Section 507.1 amended – Required water supply.

Section 507.1 of the International Fire Code is hereby amended to read as follows:

507.1 Required Water Supply. An *approved* water supply capable of supplying the required fire flow for fire protection shall be provided to premises on which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction.

All underground piping shall be designed, constructed and installed in accordance with NFPA 24 for Private fire service mains and NFPA 13 for water-based fire protection systems. In addition to the requirements of these standards, two forms of joint restraint shall be used.

Exception: Underground piping that is threaded, welded, heat fused or utilizes chemical or solvent cemented connections provided that such joints can pass the hydrostatic test without shifting of the piping.

Point of Information
Piping systems under the control of the Bellevue Utilities Department shall be installed in accordance with the Bellevue Utilities Engineering Standard.

23.11.507.3 International Fire Code Section 507.3 amended – Fire flow.

Section 507.3 of the International Fire Code is hereby amended to read as follows:

507.3 Fire flow. Fire flow requirements for buildings or portions of buildings and facilities shall be determined by an *approved* method and shall be in accordance with Appendix B as amended, unless otherwise *approved* by the *fire code official.*

Point of Information
Fire flow shall be measured in accordance with WAC 246-290-230 & WAC 246-290-420 as now or hereafter amended.

23.11.507.5.1 International Fire Code Section 507.5.1 amended – Where required.

Section 507.5.1 of the International Fire Code is hereby amended to read as follows:

507.5.1 Where required. Where any portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet from a hydrant on a fire apparatus access road, as measured by an *approved* route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the *Fire code official.*

Exception: For Group R-3 and U occupancies equipped throughout with an *approved* automatic sprinkler system installed in accordance with International Fire Code Section 903.3.1.3, the distance requirement shall be 600 feet.

23.11.507.5.3 International Fire Code Section 507.5.3 amended – Private fire service mains and water tanks.

Section 507.5.3 of the International Fire Code is hereby amended to read as follows:

507.5.3 Private fire service mains and water tanks. Private fire service mains and water tanks shall be periodically inspected, tested and maintained in accordance with NFPA 25 at the following intervals:

1. Private fire hydrants of all types: Inspection annually and after each operation; flow test and maintenance annually. Property owners with private hydrants are responsible to obtain annual, satisfactory inspection of their private hydrant(s) from a qualified inspector.

2. Fire service main piping: Inspection of exposed, annually; flow test every 5 years.

3. Fire service main piping strainers: Inspection and maintenance after each use.

507.5.3.1 Private Hydrants – Use

1. Fire hydrant protection may be provided by private fire hydrants.

2. No person may open, damage, interfere with, or otherwise use a private hydrant, except in a manner and subject to such conditions as the fire official may require.

507.5.3.2 Private Hydrants – regulations. The *fire code official*, with the assistance of the City of Bellevue Utilities Department, is authorized to establish regulations and design standards for private hydrants. These officials have the authority to interpret and apply the regulations and standards and to make rulings and orders consistent with the purpose of this chapter.

Point of Information
Hydrants shall be 5 1/4" M.V.O. Hydrant with 2-2 1/2 N.S.T. and 1-4" Pumper Ports, City of Seattle Standard Thread – M.J. Inlet with lugs, brass to brass sub-seat. (Ref.: http://www.bellevuewa.gov/pdf/Utilities/2016_W-13.pdf).

507.5.3.3 Private Hydrants – Inspection reports. Inspection reports of private hydrants must be submitted to www.TheComplianceEngine.com within five working days of the date of inspection by the servicing inspector.

507.5.3.4 Private Hydrants – damage – malfunction. Property owners, their agents and tenants with private hydrants shall immediately contact the fire department in the event a private hydrant is damaged, malfunctions, or is otherwise out of order. "Immediately" means not more than forty-eight hours after a problem is noticed or should have been noticed in the exercise of reasonable care.

507.5.3.5 Private Hydrants – maintenance and repair. All maintenance and repair of private hydrants shall be solely the responsibility of the property owner. Obligations imposed upon property owners apply also to their managers and other authorized agents.

507.5.3.6 Private hydrants – access. Roads and access to the fire hydrant must be provided in accordance with International Fire Code Sections 503 and 507.

23.11.508.1.2 International Fire Code Section 508.1.2 amended – Separations and penetrations.

Section 508.1.2 of the International Fire Code is hereby amended to read as follows:

508.1.2 Separation & Penetrations. Fire command center shall be separated from the remainder of the building by not less than a 2-hr. fire barrier constructed in accordance with section 707 of the International Building Code (IBC) or horizontal assembly constructed in accordance with section 711 of the IBC, or both.

Penetrations into and openings through a fire command center are prohibited except for required exit doors, equipment and ductwork necessary for heating, cooling or ventilation, sprinkler branch line piping, electrical raceway for fire department communication and control and electrical raceway serving the fire command center or being controlled from the fire command center. Such penetrations shall be protected in accordance with International Building Code Section 714.

Exception: Metallic piping, with no joints or openings within the fire command center, are allowed if penetrations are protected in accordance with Section 714.

23.11.510 International Fire Code Section 510 amended – Emergency Responder Communication Coverage.

Section 510 of the International Fire Code is hereby amended to read as follows:

510.1 Emergency responder communication coverage in new buildings. *Approved* in-building, emergency responder communication enhancement system (ERCES) for emergency responders shall be provided in the following buildings:

1. High rise buildings.
2. The total building area is 50,000 square feet or more.
3. The total basement area is 10,000 square feet or more; or
4. There are floors used for human occupancy more than 30 feet below the finished floor of the lowest level of exit discharge.
5. Buildings or structures where the Fire or Police Chief determines that in-building radio coverage is critical because of its unique design, location, use or occupancy.

Exceptions:

1. Buildings and areas of buildings that have minimum radio coverage signal strength levels of the Puget Sound Regional 800 MHz Radio System within the building in accordance with Section 510.4.1 without the use of an emergency responder communications enhancement system (ERCES).

2. In facilities where emergency responder communication coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the *fire code official* shall have the authority to accept an automatically activated emergency responder communication coverage system.

3. One- and two-family dwellings and townhouses.

4. Subject to the approval of the *fire code official*, buildings other than high-rise buildings, colleges, universities and buildings primarily occupied by Group E or I occupancies that have completed a Mobile Emergency Responder Radio Coverage application and submitted payment as outlined in the application.

Point of Information
When determining if the minimum signal strength referenced in Section 510.4.1.1 exists at a subject building, the signal strength shall be measured at any point on the exterior of the building up to the highest point on the roof.

510.1.1 Occupancy. It shall be unlawful to occupy any portion of a building or structure until Emergency Responder Communication Coverage has been tested and *approved* in accordance with the provisions of Section 510.

510.2 Emergency responder communication enhancement system in existing buildings. Existing buildings shall be provided with *approved* in-building, emergency responder communications enhancement system for emergency responders as required in Chapter 11.

510.3 Permit required. A construction permit for the installation of or modification to in-building, emergency responder communication enhancement systems and related equipment is required as specified in Section 105.6.4. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

Point of Information

Prior coordination and approval from the Frequency Licensing Authority is required before installation of an Emergency Responder Communication Enhancement System.

Designers and contractors should be aware of PSERN's requirements for Distributed Antenna Systems which can be found via https://psern.org/requirements/

510.4 Technical requirements. Equipment required to provide in-building, emergency responder communications enhancement systems shall be listed in accordance with UL 2524. Systems, components and equipment required to provide the in-building, emergency responder communication enhancement system shall comply with Sections 510.4.1 through 510.4.2.8.

510.4.1 Emergency responder communication enhancement system signal strength. The building shall be considered to have acceptable in-building, emergency responder communication enhancement system where signal strength measurements in 95 percent of all areas and 99 percent of areas designated as critical areas by the *fire code official* on each floor of the building meet the signal strength requirements in Sections 510.4.1.1 through 510.4.1.3.

510.4.1.1 Minimum signal strength into the building. The minimum inbound signal strength shall be sufficient to provide usable voice communications throughout the coverage area as specified by the *fire code official*. The inbound signal level shall be a minimum of -95dBm in 95% of the coverage area and 99% in critical areas and sufficient to provide not less than a Delivered Audio Quality (DAQ) of 3.0 or an equivalent Signal-to-Interference-Plus-Noise Ratio (SINR) applicable to the technology for either analog or digital signals.

510.4.1.2 Minimum signal strength out of the building. The minimum outbound signal strength shall be sufficient to provide usable voice communications throughout the coverage area as specified by the *fire code official*. The outbound signal level shall be sufficient to provide not less than a DAQ of 3.0 or an equivalent SINR applicable to the technology for either analog or digital signals. A minimum signal strength of -95 dBm shall be received by the Puget Sound Regional 800 MHz Radio System when transmitted from within the building.

510.4.1.3 System performance. Signal strength shall be sufficient to meet the requirements of the applications being utilized by public safety for emergency operations through the coverage area as specified by the *Frequency Licensing Authority* in Section 510.4.2.2.

510.4.1.4 Critical areas shall be such areas as the fire command center(s), the fire pump room(s), interior exit stairways, exit passageways, elevator lobbies,

standpipe cabinets, sprinkler sectional valve locations, or other areas required by the *fire code official*.

510.4.2 System design. The in-building, emergency responder communication enhancement system shall be designed in accordance with Sections 510.4.2.1 through 510.4.2.8 and NFPA 1221.

510.4.2.1 Amplification systems and components. Buildings and structures that cannot support the required level of in-building, emergency responder communication system shall be equipped with systems and components to enhance the radio signals and achieve the required level of in-building, emergency responder communication enhancement system specified in Sections 510.4.1 through 510.4.1.4. In-building, emergency responder communications enhancement systems utilizing radio-frequency-emitting devices and cabling shall be approved by the *Frequency Licensing Authority*. Prior to installation, all RF-emitting devices shall have the certification of the radio licensing authority and be suitable for public safety use.

510.4.2.2 Technical criteria. The *Frequency Licensing Authority* shall maintain a document providing the specific technical information and requirements for the in-building, emergency responder communication enhancement system. This document shall contain, but not be limited to, the various frequencies required, the location of radio sites, the effective radiated power of radio sites, the maximum propagation delay in microseconds, the applications being used and other supporting technical information necessary for system design.

510.4.2.3 Standy power. In-building, emergency responder communication enhancement system coverage systems shall be provided with dedicated standby batteries or provided with 2-hour standby batteries and connected to the facility generator power system in accordance with Section 1203. The standby power supply shall be capable of operating the emergency responder radio coverage system at 100-percent system capacity for a duration of not less than 12 hours.

[WS]510.4.2.4 Signal booster requirements. If used, signal boosters shall meet the following requirements:

1. All signal booster components shall be contained in a National Electrical Manufacturer's Association (NEMA) 4, IP66-type waterproof cabinet or equivalent.

   Exception: Listed battery systems that are contained in integrated battery cabinets.

2. Battery systems used for the emergency power source shall be contained in a NEMA 3R or higher-rated cabinet, IP65-type waterproof cabinet or equivalent.

3. Equipment shall have FCC or other radio licensing authority certification and be suitable for public safety use prior to installation.
4. Where a donor antenna exists, isolation shall be maintained between the donor antenna and all inside antennas to not less than 20dB greater than the system gain under all operating conditions.
5. Bi-Directional Amplifiers (BDA) used for in-building, emergency responder communication enhancement systems shall be fitted with anti-oscillation detection and control circuitry and per-channel AGC.
6. The installation of amplification systems or enhancement systems that operate on or provide the means to cause interference on any in-building, emergency responder communication enhancement system network shall be coordinated and approved by the *Frequency Licensing Authority.*
7. Unless otherwise approved by the *Frequency Licensing Authority*, only channelized signal boosters shall be permitted.

   Exception: Broadband BDA's may be utilized when specifically authorized in writing by the *Frequency Licensing Authority*.

Point of Information
BDA's must comply with PSERN's (www.psern.org/requirements) detailed requirements, which include channelized, minimum of 28 channels, supporting analog, P25 Phase I (FDMA), and P25 Phase II (TDMA).

510.4.2.5 System monitoring. The emergency responder communication enhancement system shall include automatic supervisory and trouble signals that are monitored by a supervisory service and are annunciated by the fire alarm system in accordance with NFPA 72. The following conditions shall be separately annunciated by the fire alarm system, or, if the status of each of the following conditions is individually displayed on a dedicated panel on the in-building, emergency responder communication enhancement system, a single automatic supervisory signal may be annunciated on the fire alarm system indicating deficiencies of the in-building, emergency responder communication enhancement system:

1. Loss of normal AC power supply.
2. System battery charger(s) failure.

3. Malfunction of the donor antenna(s).
4. Failure of active RF-emitting device(s).
5. Low-battery capacity at 70-percent reduction of operating capacity.
6. Active system component malfunction.
7. Malfunction of the communications link between the fire alarm system and the in-building, emergency responder communication enhancement system.
8. Oscillation of active RF-emitting device(s).

510.4.2.6 Additional frequencies and change of frequencies. The in-building, emergency responder communication coverage enhancement system shall be capable of modification or expansion in the event frequency changes are required by the FCC or other radio licensing authority, or additional frequencies are made available by the FCC or other radio licensing authority.

510.4.2.7 Design documents. The *fire code official* shall have the authority to require "as-built" design documents and specifications for in-building, emergency responder communications enhancement systems. The documents shall be in a format acceptable to the *fire code official*.

510.4.2.8 Radio communication antenna density. Systems shall be engineered to minimize the near-far effect. In-building, emergency responder communication enhancement system designs shall include sufficient antenna density to address reduced gain conditions.

Exceptions:

1. Systems where all portable devices within the same band use active power control

[WS]510.5 Installation requirements. The installation of the in-building, emergency responder communication enhancement system shall be in accordance with NFPA 1221 and Sections 510.5.1 through 510.5.7.

510.5.1 Mounting of the donor antenna(s). To maintain proper alignment with the system designed donor site, donor antennas shall be permanently affixed on the highest possible position on the building or where *approved* by the *fire code official*. A clearly visible sign stating "Movement or Repositioning of this Antenna is Prohibited without Approval from the *Fire Code Official*." Shall be posted. The antenna installation shall be in accordance with the applicable requirements in the *International Building Code* for weather protection of the building envelope.

510.5.2 Approval prior to installation. Amplification systems capable of operating on frequencies licensed to any public safety agency by the FCC or other radio

licensing authority shall not be installed without prior coordination and approval of the *Frequency Licensing Authority*.

510.5.3 Minimum qualifications of personnel. The minimum qualifications of the system designer and lead acceptance test personnel shall include both of the following:

1. A valid FCC-issued general radio telephone operators license.
2. Certification of in-building system training issued by an *approved* organization or *approved* school, or a certificate issued by the manufacturer of the equipment being installed.

510.5.4 Acceptance test procedure. Where an in-building, emergency responder communication enhancement system is required, and upon completion of installation, the building owner shall have the radio system tested to verify that two-way coverage on each floor of the building is in accordance with Section 510.4.1. The test procedure shall be conducted as follows:

1. Each floor of the building shall be divided into a grid of 20 approximately equal test areas, with a maximum test area size of 6,400 square feet. Where the floor area exceeds 128,000 square feet, the floor shall be divided into as many approximately equal test areas as needed, such that no test area exceeds the maximum square footage allowed for a test area.
2. Coverage testing of signal strength shall be conducted using a calibrated spectrum analyzer for each of the test grids. A diagram of this testing shall be created for each floor where coverage is provided, indicating the testing grid used for the test in Section 510.5.4(1), and including signal strengths and frequencies for each test area. Indicate all critical areas.
3. Functional talk-back testing shall be conducted using two calibrated portable radios of the latest brand and model used by the agency's radio communications system or other equipment *approved* by the *fire code official*. Testing shall use Digital Audible Quality (DAQ) metrics, where a passing result is a DAQ of 3 or higher. Communications between handsets shall be tested and recorded in the grid square diagram required by section 510.5.4(2): each grid square on each floor; between each critical area and a radio outside the building; between each critical area and the fire command center or fire alarm control panel; between each landing in each stairwell and the fire command center or fire alarm control panel.
4. Failure of more than 5% of the test areas on any floor shall result in failure of the test.

Exception: Critical areas shall be provided with 99 percent floor area coverage.

5. In the event that two of the test areas fail the test, in order to be more statistically accurate, the floor shall be permitted to be divided into 40 equal test areas. Failure of not more than two nonadjacent test areas shall not result in failure of the test. If the system fails the 40-area test, the system shall be altered to meet the 95-percent coverage requirement.

6. A test location approximately in the center of each test area shall be selected for the test, with the radio enabled to verify two-way communications to and from the outside of the building through the public agency's radio communications system. Once the test location has been selected, that location shall represent the entire test area. Failure in the selected test location shall be considered to be a failure of that test area. Additional test locations shall not be permitted.

7. The gain values of all amplifiers shall be measured, and the test measurement results shall be kept on file with the building owner so that the measurements can be verified during annual tests. In the event that the measurement results become lost, the building owner shall be required to rerun the acceptance test to reestablish the gain values.

8. As part of the installation, a spectrum analyzer or other suitable test equipment shall be utilized to ensure spurious oscillations are not being generated by the subject signal booster. This test shall be conducted at the time of installation and at subsequent annual inspections.

9. Systems shall be tested using two portable radios simultaneously conducting subjective voice quality checks. One portable radio shall be positioned not greater than 10 feet (3048 mm) from the indoor antenna. The second portable radio shall be positioned at a distance that represents the farthest distance from any indoor antenna. With both portable radios simultaneously keyed up on different frequencies within the same band, subjective audio testing shall be conducted and comply with DAQ levels as specified in Sections 510.4.1.1 and 510.4.1.2.

10. Documentation maintained on premises. At the conclusion of the testing, and prior to issuance of the building Certificate of Occupancy, the building owner or owner's representative shall place a copy of the following records in the Distributed Antenna System enclosure or the building engineer's office. The records shall be available to the *fire code official* and maintained by the building owner for the life of the system:

a. A certification letter stating that the emergency responder enhancement coverage system has been installed and tested in accordance with this code, and that the system is complete and fully functional.
b. The grid square diagram created as part of testing in Sections 510.5.4(2) and 510.5.4(3).
c. Data sheets and/or manufacturer specifications for the emergency responder enhancement coverage system equipment; back up battery; and charging system (if utilized).
d. A diagram showing device locations and wiring schematic,
e. A copy of the electrical permit.

11. Acceptance test reporting to *fire code official*. At the conclusion of the testing, and prior to issuance of the building Certificate of Occupancy, the building owner or owner's representative shall submit to the *fire code official* a report of the acceptance test by way of the department's third-party vendor thecomplianceengine.com.

510.5.5 FCC compliance. The emergency responder radio coverage system installation and components shall comply with all applicable federal regulations including, but not limited to, FCC 47 CFR Part 90.219.

510.5.6 Wiring. The backbone, antenna distribution, radiating, or any fiber-optic cables shall be rated as plenum cables. The backbone cables shall be connected to the antenna distribution, radiating, or copper cables using hybrid coupler devices of a value determined by the overall design. Backbone cables shall be routed through an enclosure that matches the building's required fire-resistance rating for shafts or interior exit stairways. The connection between the backbone cable and the antenna cables shall be made within an enclosure that matches the building's fire-resistance rating for shafts or interior exit stairways, and passage of the antenna distribution cable in and out of the enclosure shall be protected as a penetration per the International Building Code.

510.5.7 Identification Signs. Emergency responder enhancement systems shall be identified by an *approved* sign located on or near the Fire Alarm Control Panel or other *approved* location stating "This building is equipped with an Emergency Responder Enhancement Coverage System. Control Equipment located in room (insert information provided by owner)".

A sign stating "Emergency Responder Enhancement Coverage System Equipment" shall be placed on or adjacent to the door of the room containing the main system components.

510.6 Maintenance. The in-building, emergency responder communication enhancement system shall be maintained operational at all times in accordance with Sections 510.6.1 through 510.6.4.

510.6.1 Testing and proof of compliance. The owner of the building or owner's authorized agent shall have the in-building, two-way emergency responder communication coverage system inspected and tested annually or where structural changes occur including additions or remodels that could materially change the original field performance tests. Testing shall consist of the following items (1) through (7):

1. In-building coverage test as required by the *fire code official* as described in Section 510.5.4 "Acceptance test procedure" or 510.6.1.1 "Alternative in-building coverage test".

   Exception: Group R Occupancy annual testing is not required within dwelling units.

2. Signal boosters shall be tested to verify that the gain/output level is the same as it was upon initial installation and acceptance or set to optimize the performance of the system.

3. Backup batteries and power supplies shall be tested under load of a period of 2 hours to verify that they will properly operate during an actual power outage. If within the 2-hour test period the battery exhibits symptoms of failure, the test shall be extended for additional 1-hour periods until the integrity of the battery can be determined.

4. All other active components shall be checked to verify operation within the manufacturer's specifications.

5. If a fire alarm system is present in the building, a test shall be conducted to verify that the fire alarm system is properly supervising the emergency responder communication coverage system as required in Section 510.4.2.5. The test is performed by simulating alarms to the fire alarm control panel. The certifications in Section 510.5.2 are sufficient for the personnel performing this testing.

6. At the conclusion of testing, a record of the inspection and maintenance along with an updated grid diagram of each floor showing tested strengths in each grid square and each critical area shall be added to the documentation maintained on the premises in accordance with Section 510.5.4.

7. At the conclusion of the testing, a report, which shall verify compliance with Section 510.6.1, shall be submitted to the *fire code official* by way of the department's third-party vendor thecomplianceengine.com

510.6.1.1 Alternative In-building coverage test. When the comprehensive test documentation required by Section 510.5.3 is available, or the most recent full five-year test results are available if the system is older than six years, the in-building coverage test required by the *fire code official* in Section 510.6.1(1), may be conducted as follows:

1. Functional talk-back testing shall be conducted using two calibrated portable radios of the latest brand and model used by the agency's radio communications system or other equipment *approved* by the *fire code official*. Testing shall use Digital Audible Quality (DAQ) metrics, where a passing result is a DAQ of 3 or higher. Communications between handsets in the following locations shall be tested: between the fire command center or fire alarm control panel and a location outside the building; between the fire alarm control panel and each landing in each stairwell.
2. Coverage testing of signal strength shall be conducted using a calibrated spectrum analyzer for:

   (a) Three grid areas per floor. The three grid areas to be tested on each floor are the three grid areas with poorest performance in the acceptance test or the most recent annual test, whichever is more recent; and

   (b) Each of the critical areas identified in acceptance test documentation required by Section 510.5.3, or as modified by the *fire code official*, and

   (c) One grid square per serving antenna.
3. The test area boundaries shall not deviate from the areas established at the time of the acceptance test, or as modified by the *fire code official*. The building shall be considered to have acceptable emergency responder communication coverage when the required signal strength requirements in 510.4.1.1 and 510.4.1.2 are located in 95 percent of all areas on each floor of the building and 99 percent in Critical Areas, and any non-functional serving antenna are repaired to function within normal ranges. If the documentation of the acceptance test or most recent previous annual test results are not available or acceptable to the *fire code official*, the radio coverage verification testing described in 510.5.3 shall be conducted.

510.6.2 Additional frequencies. The building owner shall modify or expand the in-building, emergency responder communication enhancement system at their expense in the event frequency changes are required by the FCC or other radio licensing authority, or additional frequencies are made available by the FCC or other radio licensing authority. Prior approval of an in-building, emergency responder communication enhancement system on previous frequencies does not exempt this section.

510.6.3 Nonpublic safety system. Where other nonpublic safety amplification systems installed in buildings reduce the performance or cause interference with the in-building, emergency responder communications enhancement system, the nonpublic safety amplification system shall be corrected or removed.

510.6.4 Field testing. Agency personnel shall have the right to enter onto the property at any reasonable time to conduct field testing to verify the required level of radio coverage or to disable a system adversely impacting the emergency responder communication enhancement system in the region.

23.11.602 International Fire Code Section 602 amended – Definitions

Section 602 of the International Fire Code is hereby amended as follows:

SECTION 602
DEFINITIONS

602.1 Definitions. The following terms are defined in Chapter 2:

COMMERCIAL COOKING APPLIANCES.
HOOD.
Type I.
Type II.
Power Tap
REFRIGERANT.
REFRIGERATING (REFRIGERATION) SYSTEM.

23.11.604.8 International Fire Code Section 604.8 added – Elevator Maintenance

Section 604 of the International Fire Code is hereby amended with a new Section 604.8 to read as follows:

604.8 Duty of building operators to repair elevator and give notice. Any owner or lessor of the entirety of a building subject to this chapter, or any agent thereof with the responsibility for managing such building (hereafter "building operator") shall ensure that the elevator is accessible, usable and in good working order at all times.

604.8.1 Communication. Whenever an elevator is out of service, the building operator shall provide notice to all occupants in the building via text, e-mail, or phone call as well as a written notice posted on or adjacent to the elevator on each floor. The notice shall contain at least the following information:

1. The anticipated date and time that elevator service will resume;
2. Accommodations available for occupants that are dependent on elevator; and
3. Contact information if occupants have any questions.

Exception: Non-residential buildings may limit the notice to a written notice posted with the above information on or adjacent to the elevator on each floor.

604.8.2 Residential Buildings Served by a Single Elevator Level of Service. Buildings served by a single elevator shall maintain a full-service maintenance contract with a Washington State Licensed Elevator Company that provides the industries' highest-level service.

604.8.3 Accommodations for Residential Buildings Served by a Single Elevator. Residential building served by a single elevator shall maintain a plan to address out of service conditions for mobility impaired occupants at no cost to the occupant. Such plan shall include at least the following elements:

1. Transportation in and out of the building. Building operators shall maintain a list of companies qualified to transport mobility impaired individuals in and out of the building up to once per day at no expense to the individual when elevator is out of service for up to 24 hours.
2. Alternate housing. When the elevator is out of service for longer than 72 hours, the building operator shall provide upon request alternative housing for any person residing in the building who needs to use the elevator to gain access to or egress from his or her unit because of such person's impaired ability to climb stairs as a result of such person's physical disability, medical condition, infirmity, illness or other disability. Such alternative housing shall be decent, safe, sanitary and provide reasonable accommodation for the person's disability. Any alternate housing shall be provided at the building operator's expense. The duty to provide alternative housing shall not arise if the building operator is prevented from repairing the elevator within seventy-two hours or any time thereafter due to a natural disaster or an act of God.

604.8.4 Failure to timely repair--Civil remedies. Where the failure to timely repair an elevator or to provide alternative housing, as required by Section 604.8 results in any person residing in the building having substantially restricted access to or egress from his or her unit because of such person's impaired ability to climb stairs as a result of such person's physical disability, medical condition, infirmity, illness or other similar circumstance, the person whose access to or egress from such building has been substantially restricted as set forth in this subsection may request the City of Bellevue initiate a code compliance investigation. If upon investigation the City of Bellevue determines a building operator has violated a provision of BCC 11.23.604 it may issue a civil violation pursuant to BCC 1.18 and also pursue such other legal remedies as may be appropriate.

604.8.5 Prohibition on retaliation and discrimination in renting.

A. No landlord or building operator may bring or threaten to bring an action to recover possession, cause a tenant to quit the unit involuntarily, serve any notice to quit or notice of termination of tenancy, decrease any services or increase the rent where the landlord's intention is retaliation against the tenant for the tenant's assertion or exercise of rights under this chapter by reason of their disability. Such retaliation shall be a defense to an action to recover possession, or it may serve as a basis for an affirmative suit by the tenant for actual and punitive damages and injunctive relief as may be

available through the Human Rights Commission pursuant to RCW 49.60, or other legal remedy.

B. It shall be illegal for any landlord to refuse to rent to any persons on the grounds that they may assert their rights under this chapter because they require an elevator for access to or egress from the building. Any such claim may be made to the Human Rights Commission pursuant to RCW 49.60.

604.8.6 Remedies cumulative. The remedies provided by this chapter are in addition to all other remedies available to any party with respect to ensuring accessibility and usability of elevators.

23.11.901.11 International Fire Code Section 901.11 added – Preventable responses to fire alarms.

Section 901 of the International Fire Code is hereby amended by the addition of a new subsection 901.11 to read as follows:

901.11 Preventable responses to fire alarms – scope. This section shall apply to activation of a fire alarm system resulting in unwarranted responses of fire apparatus due to either direct transmission of the alarm to a monitoring station or telephone report of fire alarm activation caused by any of the following:

1. Improper type, installation, sensitivity, or maintenance of automatic detectors;
2. Improper installation (including un*approved* or incompatible components), programming or maintenance of fire protection systems including systems with unapparent reasons for repetitious alarms;
3. Erroneous transmission of an alarm including the reporting of trouble signals by fire alarm monitoring companies;
4. Work on a fire alarm system or automatic extinguishing system connected to an alarm system when reasonable steps were not taken to prevent reporting of an alarm to the fire department;
5. Fire drills or tests of alarm or extinguishing systems when reasonable steps were not taken to prevent reporting of an alarm to the fire department;
6. Work including painting, welding, cleaning, cooking, dust producing or other activities which could activate a fire alarm detector;
7. Smoke or fumes resulting from closed fireplace dampers, cooking activities, smoking of tobacco products, etc., including opening a door to a corridor equipped with detectors for the purpose of ventilating such smoke or fumes.

Exception: This section shall not apply to activation of a fire alarm system resulting from the following:

1. Any actual fire, explosion or equipment malfunction or other situation that could have resulted in a fire;
2. Any manual activation of an alarm where it was believed that a fire or any other emergency requiring response of emergency personnel existed;
3. Malicious manual activation or unlawful tampering with a fire alarm system;
4. Accidental striking of an alarm box, detector, circuitry, panel or other components of an alarm system or accidental breakage or discharge of a sprinkler system or other fire extinguishing system;
5. Accidental breakage or leak of any system that releases steam, heat, gases, water or vapors which might activate a detector;
6. Earthquake, lightning or natural occurrences that result in movement or flooding of a building;
7. Work on telephone lines or central office equipment.

901.11.1 Fees.

1. Exempt Alarms.

   A. The first preventable fire department response to fire alarms from any one system during a calendar year quarter shall be exempt except that there shall be no exempt responses to alarms caused by alarm system monitoring companies or companies performing work on fire alarm or fire extinguishing systems.

   B. Newly installed alarm systems are allowed a grace period of 30 days or up to five preventable to ensure proper functioning of the system.

2. Nonexempt Fire Department Responses to Fire Alarms.

   A. A fee of $150.00 shall be charged for the first nonexempt preventable fire department response to a fire alarm during a calendar year quarter from any one system.

   B. A fee of $200.00 shall be charged for all subsequent nonexempt preventable fire department responses to a fire alarm from any system during the same ~~a~~ calendar year quarter.

901.11.1.1 Late Charges. All balances 30 days or greater past the invoice date are assessed a late charge of 1%, with a minimum charge of $25 per month.

Point of Information
Preventable responses beyond five in a calendar year quarter are subject to the full cost of the response. See BMC 23.11.102 for further information.

901.11.2. Responsibilities.

A. The owner of the alarm system or subscriber of an alarm service shall be responsible for all preventable fire department responses resulting from activation of a fire alarm system including those caused by tenants or any other occupant of the building or occupancy, except that fire alarm monitoring companies shall be responsible for their erroneous transmission of alarms and companies performing work on fire alarm or extinguishing systems shall be responsible when such work results in a fire department response.

B. When a preventable fire department response to a fire alarm has occurred, the responsible party shall respond as directed by the fire department, within 5 business days, stating the reasons for such alarm, the corrective action taken to prevent recurrence and any supporting documentation.

C. The *fire code official*'s determination that a preventable fire department response has occurred shall be made in writing and shall constitute the final decision of the City. Any person aggrieved by this determination may file an appeal with the Hearing Examiner within thirty (30) days. The Hearing Examiner shall have jurisdiction over such appeal in accordance with the provisions of Section 108 of the International Fire Code as now or hereafter amended in this chapter and BCC 1.18 as now or hereafter amended.

23.11.901.12 International Fire Code Section 901.12 added – Silencing and Resetting Fire Alarms. Fire Alarms shall not be silenced or reset except by the Fire Department unless specifically authorized by the Fire Department.

23.11.903.2.11.8 International Fire Code Section 903.2.11.8 amended – Buildings exceeding 10,000 square feet.

Section 903.2.11.8 of the International Fire Code is hereby amended by the addition of a new subsection 903.2.11.8 to read as follows:

903.2.11.8 Buildings exceeding 10,000 square feet. An *automatic sprinkler system* shall be installed throughout all newly constructed buildings where the total floor area exceeds 10,000 square feet including basements.

An *automatic sprinkler system* shall also be installed throughout existing buildings when an addition is made to the building and the total floor area, including the basements, of the existing building and the addition combined exceeds 10,000 square feet, or when the value of a structural alteration or repair of an existing building 10,000 square feet in area or greater exceeds 50 percent of the assessed valuation of such existing building, or exceeds 50 percent of the recognized replacement cost of the structure, without consideration of depreciation, as determined under the Marshall Valuation Service Cost Handbook, whichever is greater.

For purposes of this section, portions of buildings separated by one or more *fire walls* will not be considered a separate building.

To the extent this section conflicts with any other provision of the *International Building Code* or the *International Fire Code* adopted by the City, this section shall control.

23.11.903.3 International Fire Code Section 903.3 amended - Installation Requirements

Section 903.3 of the International Fire Code is hereby amended to read as follows:

Installation requirements. *Automatic sprinkler systems* shall be designed and installed in accordance with Sections 903.3.1 through 903.3.9.

23.11.903.3.1 International Fire Code Section 903.3.1 amended – Standards.

Section 903.3.1 of the International Fire Code is hereby amended to read as follows:

903.3.1 Standards. Sprinkler systems shall be designed and installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3 and other chapters of this code, as applicable. In addition, sprinkler systems shall be designed with a buffer to account for water system fluctuations to include a low reservoir condition. Such buffer shall be 5% for static pressures less than 50 p.s.i. and 10% for static pressures above 50 p.s.i.

Exception: Buffers are not required for systems designed in accordance with Section 903.3.1.3 (NFPA 13 D).

Permit applicants shall independently verify site specific static pressure:

- Prior to initiating sprinkler system.
- Prior to installing any sprinkler piping, including the underground supply.
- Prior to requesting any cover inspections.

23.11.903.3.1.1 International Fire Code Section 903.3.1.1 amended – NFPA 13 Sprinkler Systems and seismic coefficient.

Section 903.3.1.1 of the International Fire Code is hereby amended to read as follows:

903.3.1.1 NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an *automatic* sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 except as provided in Section 903.3.1.1.1, 903.3.1.1.2 and 903.1.1.3.

903.3.1.1.1 Exempt locations. Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an *approved* automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from a room merely because it is damp, of fire-resistance rated construction or contains electrical equipment.

1. A room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. A room or space where sprinklers are considered undesirable because of the nature of the contents, when *approved* by the *fire code official*.
3. In rooms or areas that are of noncombustible construction with wholly noncombustible contents.
4. Fire service access elevator machine rooms and machinery spaces.
5. Machine rooms and machinery spaces associated with occupant evacuation elevators designed in accordance with Section 3008 of the International Building Code.
6. Elevator machine rooms, elevator machinery spaces, control spaces, or hoistways of traction elevators that comply with NFPA 13.

903.3.1.1.2 Bathrooms. In Group R occupancies, sprinklers shall not be required in bathrooms that do not exceed 55 square feet (5 m2) in area and are located within individual *dwelling units* or *sleeping units*, provided that walls and ceilings, including the walls and ceilings behind a shower enclosure or tub, are of noncombustible or limited-combustible materials with a 15-minute thermal barrier rating.

23.11.903.3.1.1.3 International Fire Code Section 903.3.1.1.3 added – Seismic coefficient.

Section 903.3.1.1 of the International Fire Code is hereby amended by the addition of a new subsection 903.3.1.1.3 to read as follows:

903.3.1.1.3 Seismic Coefficient. The coefficient Cp for seismic bracing design calculations in accordance with NFPA 13 shall either use a value of 0.70 or shall use a value based on site specific USGS data.

23.11.903.3.1.2 International Fire Code Section 903.3.1.2 amended – NFPA 13R sprinkler systems.

Section 903.3.1.2 of the International Fire Code as adopted by this chapter is amended to read as follows:

903.3.1.2 NFPA 13 R Sprinkler Systems. Automatic sprinkler systems in Group R occupancies up to and including four stories in height shall be permitted to be installed throughout in accordance with NFPA 13R.

Buildings designed in accordance with Washington Administrative Code 51-50-0504, 0510 or Section 510.4 of the International Building Code shall be designed in accordance with NFPA 13 throughout.

23.11.903.3.9 International Fire Code Section 903.3.9 added – Fire Sprinkler Zones

Section 903.3.9 International Fire Code is hereby amended by the addition of a new section 903.3.9 – Fire Sprinkler Zones

903.3.9 Zones. When fire walls and/or horizontal exits are provided the sprinkler system shall be zoned to coincide with the fire walls and/or horizontal exits.

Exception: Sprinkler zoning is not required in existing construction, provided that fire alarm initiating devices are provided that would provide the same level of occupant notification that a zoned sprinkler system would.

23.11.903.4.3 International Fire Code Section 903.4.3 amended – Floor control valves.

Section 903.4.3 of the International Fire Code is hereby amended to read as follows:

903.4.3 Floor control valves. *Approved* supervised indicating control valves shall be provided at the point of connection to the riser on each floor. The floor control valves shall be located within interior exit stairway and within 6' of floors or landings unless chains or other *approved* devices are readily available.

Exception: In buildings without interior exit stairways, the location of the floor control valves shall be determined by the *Fire code official*.

23.11.903.5 International Fire Code Section 903.5 amended – Testing and maintenance.

Section 903.5 of the International Fire Code is hereby amended to read as follows:

903.5 Testing and maintenance. Sprinkler systems shall be tested and maintained in accordance with Section 901.

903.5.1 Fire Sprinkler and Standpipe main/express drains. Fire Sprinkler and standpipe main/express drains shall be positioned to drain to the sanitary sewer. Additionally, maintenance or testing discharges from fire pumps shall be treated in order to comply with the National Pollution Discharge Elimination System (NPDES) requirements.

Point of Information

Water drained or otherwise discharged from a fire sprinkler system, standpipe or fire pump in the course of testing and maintenance is considered an "illicit discharge" and must drain to the sanitary sewer or be treated in order to discharge to storm drains, ditches, or water bodies.

23.11.905.3.1 International Fire Code Section 905.3.1 amended – Height.

905.3 Required installations.

Standpipe systems shall be installed where required by Sections 905.3.1 through 905.3.10. Standpipe systems are allowed to be combined with *automatic sprinkler systems*.

Exception: Standpipe systems are not required in Group R-3 occupancies.

Section 905.3.1 of the International Fire Code is hereby amended to read as follows:

905.3.1 Height. Class I standpipe systems shall be installed throughout buildings where any of the following conditions exist:

1. Four or more stories are above or below *grade plane*.
2. The floor level of the highest story is located more than 30 feet (9144 mm) above the lowest level of the fire department vehicle access.
3. The floor level of the lowest story is located more than 30 feet (9144 mm) below the highest level of fire department vehicle access.

Exceptions:

1. In determining the lowest level of fire department vehicle access, it shall not be required to consider either of the following:
   1.1. Recessed loading docks for four vehicles or less, and
   1.2. Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.

23.11.905.3.9 International Fire Code Section 905.3.9 added – High-rise building standpipes.

Section 905.3 of the International Fire Code is hereby amended by the addition of a new subsection 905.3.9 to read as follows:

905.3.9 High Rise Building Standpipes. Standpipe risers shall be combination standpipe/sprinkler risers using a minimum pipe size of 6 inch. One 2-1/2 inch hose connection shall be provided on every intermediate floor level landing in every required stairway and elsewhere as required by NFPA 14. Where, and only where,

static or residual water pressures at any hose outlet exceeds 175 psi (1,207 kPa), *approved* pressure-regulating devices shall be installed to limit the pressure to a range between 125 and 175 psi at not less than 300 gpm. The pressure on the inlet side of the pressure-regulating device shall not exceed the rated working pressure of the device. An additional non-regulated hose connection located directly below the PRV or an equally sized bypass around the pressure regulating device with a normally closed control valve shall be provided at each reduced pressure connection.

Each non-regulated hose connection shall be labeled "High Pressure – No PRV". The sign shall have 1/2" white letters on a red background.

Point of Information:
Additional flow and pressure requirements are contained in NFPA 14. Designers should be cognizant of space considerations within stair shafts and additional signage needed for the PRV by-pass control valves.

23.11.905.3.10 International Fire Code Section 905.3.10 added – Vertical standpipes served by fire pumps in high-rise buildings.

Section 905.3 of the International Fire Code is hereby amended by the addition of a new subsection 905.3.10 to read as follows:

905.3.10 Vertical Standpipes served by Fire Pumps in high-rise buildings. Where vertical standpipes are served by fire pumps, a check valve shall be installed at the base of vertical standpipe.

23.11.905.4 International Fire Code Section 905.4 amended – Location of Class I standpipe hose connections.

Section 905.4 of the International Fire Code is hereby amended to read as follows:

905.4 Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

a. In every required interior exit stairway, a hose connection shall be provided for each floor level above or below grade. Hose connections shall be located at an intermediate floor level landing between floors. Where stairs are required to provide roof access, the standpipe roof connections shall be located adjacent to the stair opening on the roof.

   Exception: A single hose connection shall be permitted to be installed in the open corridor or open breezeway between open stairs that are not greater than 75 feet (22 860 mm) apart.

b. On each side of the wall adjacent to the exit opening of a horizontal exit.

Exceptions:

1. Where floor areas adjacent to a horizontal exit are reachable from an interior exit stairway hose connections by a 30-foot (9,144 mm) hose stream from a nozzle attached to 100 feet (30,480 mm) of hose, a hose connection shall not be required at the horizontal exit.
2. When the *Fire code official* determines that standpipe connection is not needed.

3. In every exit passageway, at the entrance from the exit passageway to other areas of a building.

   Exception: Where floor areas adjacent to an exit passageway are reachable from an interior exit stairway hose connections by a 30-foot (9,144 mm) hose stream from a nozzle attached to 100 feet (30,480 mm) of hose, a hose connection shall not be required at the entrance from the exit passageway to other areas of the building.

4. In covered and open mall buildings, adjacent to each exterior public entrance to the mall, adjacent to each entrance from an exit passageway or exit corridor to the mall, at each intermediate landing within required enclosed stairways, and at other locations as necessary so that the distance to reach all portions of a tenant space does not exceed 200 feet (60,960 mm) from a hose connection.

5. Where the roof has a slope less than four units vertical in 12 units horizontal (33.3-percent slope), at least one standpipe shall be provided with a 2 1/2 in. hose connection located on the roof. Additional hose connections shall be provided so that all portions of the roof are within 200 feet of hose travel distance from a standpipe hose connection. The hose connection(s) shall be at least 10 feet (3,048 mm) from the roof edge, skylight, light well or other similar openings, unless protected by a 42-inch-high (1,067 mm) guardrail or equivalent. All roof hose connections shall be arranged to be operable without entering the building. Roof connections in high-rise buildings are allowed to be located at the highest landing of a stairway with stair access to the roof. An additional hose connection shall be provided at the top of the most hydraulically remote standpipe for testing purposes.

6. Where the most remote portion of a nonsprinklered floor or story is more than 150 feet (45,720 mm) of hose travel distance from a hose connection or the most remote portion of a sprinklered floor or story is more than 200 feet (60,960 mm) of hose travel distance from a hose connection, additional hose connections shall be provided in interior exit stairway or protected locations that are accessed through protected enclosures. The protected enclosure

shall be a corridor constructed as a smoke barrier from the exit enclosure to the standpipe connection.

Exception: Hose connections in parking garages must be located in interior exit stair, protected locations, immediately adjacent to exterior exit doors, loading docks or other areas as *approved* by the *fire code official*. Subject to the approval of the *fire code official* the travel distance may also be increased to a maximum distance of 240 feet.

Point of Information
Chapter 10 of this code outlines the requirements for stairways to the roof and roof access. This section (905.4), identifies the locations of standpipes and hose connections, but does not dictate the need for additional stairways to the roof or roof access.

23.11.905.8 International Fire Code Section 905.8 amended – Dry standpipes.

Section 905.8 of the International Fire Code as adopted by this chapter is amended to read as follows:

905.8 Dry standpipes. Dry standpipes shall not be installed.

Exception: Where subject to freezing and in accordance with NFPA 14 when *approved* by the *fire code official*.

23.11.907.1 International Fire Code Section 907.1 amended – General.

Section 907.1 of the International Fire Code is hereby amended to read as follows:

907.1 General. This section covers the application, installation, performance and maintenance of fire alarm systems and their components in new and existing building and structures:

1. The requirements of Section 907.2 are applicable to new buildings and structures, new fire alarm systems, and replacement of existing fire alarm control panels being installed in existing structures.
2. When an existing fire alarm control units is replaced in existing structures, the entire fire alarm system shall comply with the requirements of Section 907.2

Point of Information
See Public Information Sheet F-75 "Fire Alarm Panel Replacement" for additional information

Fire alarm systems upgrades shall not require upgrades to other building systems, unless necessary to meet the requirements of Section 907.2.

Pursuant to Section 104.8 and subject to the approval of the *fire code official*, fire alarm system upgrades may be phased in over a time period not to exceed 5 years. Approval of a phased alarm system upgrade must be documented in an executed agreement between the applicant and city of Bellevue and shall contain measurable milestones, insurance requirements, and indemnity provisions.

3. The requirements of Section 907.9 are applicable to existing buildings and structures in addition to the condition described in item 2.

4. For the purpose of this section, fire barriers shall not be considered to create a separate building.

5. Building required by this section to be provided with a fire alarm system shall be provided with a single fire alarm system unless otherwise *approved* by the *fire code official*.

907.1.2 Fire alarm shop drawings. Shop drawings for fire alarm systems shall be prepared in accordance with NFPA 72 and submitted for review and approval prior to system installation. In addition, the submittal documents shall include a narrative and input/output matrix that supports the *approved* exiting plan for the building.

23.11.907.2.13.1.1 International Fire Code Section 907.2.13.1.1 amended – Area smoke detection.

Section 907.2.13.1.1 of the International Fire Code is hereby amended to read as follows:

907.2.13.1.1 Area smoke detection. Area smoke detectors shall be provided in accordance with this section. Smoke detectors shall be connected to an automatic fire alarm system. The activation of any detector required by this section, other than duct smoke detectors, shall activate the emergency voice/alarm communication system in accordance with Section 907.5.2.2. In addition to smoke detectors required by Sections 907.2.1 through 907.2.9, smoke detectors shall be located as follows:

1. In each mechanical equipment, electrical, transformer, telephone equipment or similar room which is not provided with sprinkler protection.

2. In each elevator machine room, machinery space, control room and control space and in elevator lobbies.

3. Within 5 feet (1,524 mm) of doors opening into stairways that are smoke proof enclosures or are pressurized stairways.

Where such locations are within unconditioned spaces, other devices may be installed in accordance with 907.4.3.

23.11.907.2.18.1 International Fire Code Section 907.2.18.1 amended – Smoke detectors.

Section 907.2.18.1 of the International Fire Code is hereby amended to read as follows:

907.2.18.1 Smoke detectors. Not fewer than one smoke detector *listed* for the intended purpose shall be installed in the following areas:

1. Electrical, Non-Utility owned transformer vault rooms, telephone equipment, elevator machine or similar rooms.
2. Elevator lobbies.
3. The main return and exhaust air plenum of each air-conditioning system serving more than one story and located in a serviceable area downstream of the last duct inlet.
4. Each connection to a vertical duct or riser serving two or more floors from return air ducts or plenums of heating, ventilating and air-conditioning systems, except that in Group R occupancies, a listed smoke detector is allowed to be used in each return-air riser carrying not more than 5,000 cfm (2.4 m3/s) and serving not more than 10 air inlet openings.
5. Within five feet of doors opening into stairways that are smoke proof enclosures, or that are pressurized stairways.

Where smoke detectors cannot be utilized due to ambient conditions, *approved* automatic heat detectors shall be installed in accordance with Section 907.4.3

23.11.907.5.2.1.1 International Fire Code Section 907.5.2.1.1 amended – Average sound pressure.

Section 907.5.2.1.1 of the International Fire Code is hereby amended to read as follows:

907.5.2.1.1 Average sound pressure. The audible alarm notification appliances shall provide a sound pressure level of 15 decibels (dBA) above the average ambient sound level or 5 dBA above the maximum sound level having a duration of not less than 60 seconds, whichever is greater, in every occupiable space within the building, or in the case of a partial alarm system, throughout the space that is provided with the fire alarm system. The minimum sound pressure levels shall be: 75 dBA in occupancies in Groups R and I-1; 90 dBA in mechanical equipment rooms; and 60 dBA in other occupancies. In occupancies with high sound levels, such as nightclubs, bars, theaters, auditoriums, sanctuaries, etc. an interface shall be

provided between the fire alarm system and the noise source to eliminate the noise source upon activation of the fire alarm system.

Exception: Private mode signaling in accordance with NFPA 72 shall be allowed in areas of group I-2 and I-3 occupancies where occupants are not expected to self-evacuate.

23.11.907.5.2.2.5 International Fire Code section 907.5.2.2.5 amended – Standby power.

Section 907.5.2.2.5 of the International Fire Code is hereby amended to read as follows:

907.5.2.2.5 Standby power. Emergency voice/alarm communications systems shall be provided with emergency power in accordance with International Building Code Section 2702 and Table 2702.

23.11.907.5.2.2.6 International Fire Code section 907.5.2.2.6 amended – Phased Evacuation.

Section 907.5.2.2.6 of the International Fire Code is hereby added as follows:

907.5.2.2.6 Phased Evacuation. All buildings more than 10 stories above the lowest level of fire department vehicle access shall utilize an *approved* phased evacuation plan.

Exceptions:

1. When an additional exit stairway meeting the requirements of Sections IBC 1011 and 1023 are provided in addition to the minimum number of exits required by Section IBC 1006.
2. Where the width of each required exit stairway is as specified in Section 1011.2 is increased by not less than 24" of additional width.
3. Where occupant self-evacuation elevators in accordance with IBC Section 3008 have been installed.
4. Where full tenant evacuation can be demonstrated to be accomplished in less than 7 minutes.

Point of Information
These provisions are intended to facilitate the simultaneous building evacuation and firefighter response into the building.

23.11.907.6.3.1 International Fire Code Section 907.6.3.1 amended – Annunciator panel.

Section 907.6.3.1 of the International Fire Code is hereby amended to read as follows:

907.6.3.1 Annunciator panel. All fire alarm systems in buildings without a fire command center shall be provided with an annunciator panel (or the main fire alarm control panel) located inside the building at the main addressed building entrance.

Exception: Other *approved* locations.

23.11.909.10.2 International Fire Code Section 909.10.2 amended – Ducts.

Section 909.10.2 of the International Fire Code is hereby amended to read as follows:

909.10.2 Ducts. Duct materials and joints, including shafts acting as ducts shall be capable of withstanding the probable temperatures and pressures to which they are exposed as determined in accordance with Section 909.10.1. Ducts shall be constructed and supported in accordance with the International Mechanical Code. Ducts shall be leak tested to 1.5 times the maximum design pressure in accordance with nationally accepted practices. Measured leakage shall not exceed 5 percent of design flow. Results of such testing shall be a part of the documentation procedure. Ducts shall be supported directly from fire resistance-rated structural elements of the building by substantial, noncombustible supports.

Exception: Flexible connections for the purpose of vibration isolation complying with the International Mechanical Code and that are constructed of *approved* fire-resistance-rated materials.

23.11.909.10.3 IFC Section 909.10.3 amended – Equipment, inlets and outlets.

Section 909.10.3 of the International Fire Code is hereby amended to read as follows:

909.10.3 Equipment, inlets and outlets. Equipment shall be located so as not to expose uninvolved portions of the building to additional fire hazard. Outdoor air inlets shall be located so as to minimize reintroduction of smoke into the building and to limit exposure of the building or adjacent buildings to an additional fire hazard. In addition, supply air shall be taken directly from an outside, uncontaminated source located a minimum distance of 20 feet from any air exhaust system or outlet.

23.11.909.11 IFC 909.11 amended – Emergency Power.

Section 909.11 of the International Fire Code is hereby amended to read as follows:

909.11 Emergency Power. Smoke control systems, including energy management systems used for smoke control or smoke removal, shall be provided with emergency power in accordance with International Building Code Section 2702.

Exception: In other than high-rise buildings, underground buildings, atriums and covered mall buildings, smoke control systems shall be provided with legally required standby power in accordance with International Building Code Section 2702.

909.11.1 Power sources and power surges. Elements of the smoke control system relying on volatile memories or the like shall be supplied with uninterruptable power sources of sufficient duration to span 15-minute primary power interruption. Elements of the smoke control system susceptible to power surges shall be suitably protected by conditioners, suppressors or other *approved* means.

23.11.909.12 International Fire Code Section 909.12 amended – Detection and control systems.

Section 909.12 of the International Fire Code is hereby amended to read as follows:

909.12 Detection and control systems. Fire detection systems providing control input or output signals to mechanical smoke control systems or elements thereof shall comply with the requirements of Section 907. Such systems shall be equipped with a control unit complying with UL 864 and listed as smoke control.

Exception: Shaft pressurization equipment in buildings constructed in accordance with Washington Administrative Code 51-50-0504, 0510 or Section 510.4 of the International Building Code may utilize a fire detection system that is listed as releasing equipment.

909.12.1 Verification. Control systems for mechanical smoke control systems shall include provisions for verification. Verification shall include positive confirmation of actuation, testing, manual override and the presence of power downstream of all disconnects. A preprogrammed weekly test sequence shall report abnormal conditions audibly, visually and by printed report or other *approved* means. The preprogrammed weekly test shall operate all devices, equipment, and components used for smoke control.

Exception: Where verification of individual components tested through the preprogrammed weekly testing sequence will interfere with, and produce unwanted effects to, normal building operation, such individual components are permitted to be bypassed from the preprogrammed weekly testing, where *approved* by the *fire code official* and in accordance with both of the following:

1. Where the operation of components is bypassed from the preprogrammed weekly test, presence of power downstream of all disconnects shall be verified weekly by a listed control unit; and

2. Testing of all components bypassed from the preprogrammed weekly test shall be in accordance with Section 909.20.6.

23.11.909.18.8.3.2 International Fire Code Section 909.18.8.3.2 amended – Certificate of compliance.

Section 909.18.8.3.2 of the International Fire Code is hereby amended to add the following subsection:

909.18.8.3.2 Certificate of compliance. A certificate of compliance shall be provided by the special inspector and responsible registered design professional certifying that the referenced property is in substantial compliance. The certificate shall identify the company, designer, special inspector that performed the testing and shall identify the name, date and address of the property being tested. The following statement must also be included in the certificate: "I have reviewed the report and by personal knowledge and on-site observation certify that the smoke control system is in substantial compliance with the *approved* design documents, and to the best of my understanding complies with requirements of the applicable codes as identified in the smoke control report."

23.11.909.21.3 International Fire Code Section 909.21.3 amended – Ducts for system.

Section 909.21.3 of the International Fire Code is hereby amended to read as follows:

909.21.3 Ducts for system. Any duct system that is part of the pressurization system shall be protected with the same fire-resistance rating as required for the elevator shaft enclosure, and equipment, control wiring, power wiring, and ductwork shall comply with one of the methods specified in *International Building Code* Section 909.20.6.1. Ducts shall be in accordance with Section 909.10.2.

23.11.909.21.4.4 International Fire Code Section 909.21.4.4 amended – Fan capacity.

Section 909.21.4.4 of the International Fire Code is hereby amended to read as follows:

909.21.4.4 Fan Capacity. The supply fan shall be either adjustable with a capacity of not less than 1,000 cfm (.4719m3/S) per door, or that specified by a registered design professional to meet the requirements of a designed pressurization system. Fans shall be in accordance with Section 909.10.5.

23.11.912.5 International Fire Code Section 912.5 amended – Signs.

Section 912.5 of the International Fire Code is hereby amended to read as follows:

912.5 Signs. A red metal sign with white raised letters at least 1 inch (25 mm) in size shall be mounted on all fire department connections serving automatic sprinklers, standpipes or fire pump connections. Such signs shall read: SPRINKLERS, STANDPIPES, COMBINED, DRY S/PIPES, DRY S/P & SPKRS, PUMP TO _____ (as specified by the *fire code official*) PSI, or TEST CONNECTION or a combination thereof as applicable.

If it is not readily apparent which building or portion the fire department connection serves, the sign shall also include the premises address or building identification, and the portion of the building protected.

Exception: A metal sign with letters at least 1 inch (25 mm) in size may match the fire department connection where chrome, brass or other *approved* decorative finish is utilized.

912.5.1 Markings. The fire department connection stand-alone pipe shall be painted red for greater visibility.

Exception: Fire department connections such as chrome, brass, or other *approved* decorative finish.

Point of Information:
Systems utilizing Pressure Reducing Valves (PRV's) must note the required boosted pressure at the Fire Department Connection, in order to overcome the PRV setting.

23.11.913.1 International Fire Code Section 913.1 amended – General.

Section 913.1 of the International Fire Code is hereby amended to read as follows:

913.1 General. Where provided, fire pumps shall be installed in accordance with this section and NFPA 20.

913.1.1 Fire Pump Controls. Fire pump controllers supplying standpipes in excess of 130 p.s.i. shall be soft start.

23.11.913.2 International Fire Code Section 913.2 amended – Protection against interruption of service.

Section 913.2 of the International Fire Code is hereby amended to read as follows:

913.2 Protection against interruption of service.

The fire pump, driver, and controller shall be protected in accordance with NFPA 20 against possible interruption of service through damage caused by explosion, fire,

flood, earthquake, rodents, insects, windstorm, freezing, vandalism and other adverse conditions.

913.2.1 Protection of fire pump rooms and access. In high-rise buildings fire pumps shall be located in rooms that are separated from all other areas of the building by 2-hour fire barriers constructed in accordance with Section 707 or 2-hour horizontal assemblies constructed in accordance with Section 711, or both. In other than high-rise buildings separation shall consist of 1-hour fire barriers constructed in accordance with Section 707 or 1-hour horizontal assemblies constructed in accordance with Section 711, or both.

Fire pump rooms not directly accessible from the outside shall be accessible through an enclosed passageway from an interior exit stairway or exterior exit. The enclosed passageway shall have a fire-resistance rating not less than the fire-resistance rating of the fire pump room.

Exception: Where a fire pump is installed in a parking garage separated from the rest of the building by fire-rated construction equivalent to the pump room, and the portion of the building containing the fire pump is protected by a sprinkler system that does not rely on the fire pump, the protected access to the pump room shall not be required.

Rooms containing fire pumps shall be free from storage, equipment, and penetrations not essential to the operation of the pump and related components.

Exception: Equipment related to domestic water distribution shall be permitted to be located within the same room as the fire pump equipment.

Point of Information

These provisions originate in NFPA 20 and are intended to facilitate fire department access to the fire pump room. Ideally fire pump rooms are located on the perimeter of the building affording direct access. Where that is not possible, a protected passageway is required. This passageway is not synonymous with an exit passageway and therefore not subject to the significant limitations of allowable penetrations. Fire pump rooms are not permitted to open directly into an exit passageway or interior exit stairway; rather the fire pump room must open into a vestibule before access to an exit passageway or an interior exit stairway.

23.11.914.2.1 International Fire Code Section 914.2.1 amended – Automatic sprinkler system – Covered and open mall buildings.

Section 914.2.1 of the International Fire Code is hereby amended to read as follows:

914.2.1 Automatic sprinkler system. Covered and open mall buildings and buildings connected shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.1.1, which shall comply with the following:

1. The automatic sprinkler system shall be complete and operative throughout occupied space in the mall building prior to occupancy of any of the tenant spaces. Unoccupied tenant spaces shall be similarly protected unless provided with *approved* alternative protection.
2. Sprinkler protection for the mall of a covered mall building shall be independent from that provided for tenant spaces or anchors. Where tenant spaces are supplied by the same system, they shall be independently controlled.
3. Sprinkler protection for the tenant spaces of an open mall building shall be independent from that provided for anchor buildings.
4. Sprinkler protection shall be provided beneath exterior circulation balconies located adjacent to an open mall.
5. Where tenant spaces are supplied by the same system, they shall be independently controlled.

23.11.914.3.1 International Fire Code Section 914.3.1 amended – Automatic sprinkler system – High-rise buildings.

Section 914.3.1 of the International Fire Code is hereby amended to read as follows:

914.3.1 Automatic sprinkler system – High rise building. Buildings and structures shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and a secondary water supply where required by Section 914.3.2.

23.11.914.3.1.3 International Fire Code Section 914.3.1.3 added – High-rise building sprinkler system design.

Section 914.3.1 of the International Fire Code is hereby amended by the addition of a new subsection 914.3.1.3 to read as follows:

914.3.1.3 High-rise building sprinkler system design. Combination standpipe/sprinkler risers using 6 in. pipe minimum, shall be used. Shut-off valves and water-flow devices shall be provided on each floor at the sprinkler system connection to each standpipe. Two four-way fire department connections serving the combination system shall be provided on separate streets well separated from each other. At least one of the fire department connections shall be connected to the riser

above a riser isolation valve. Dry pipe sprinkler systems serving parking garages may use one separate two-way fire department connection. The dry pipe sprinkler system shall be supplied by the on-site water tank.

23.11.914.3.2 International Fire Code Section 914.3.2 amended – Secondary water source.

Section 914.3.2 of the International Fire Code is hereby amended to read as follows:

914.3.2 Secondary water source. An automatic secondary on-site water source shall be provided for high-rise building as follows:

1. High-rise buildings containing R or B occupancies only shall be provided with a net usable volume of 15,000 gallons.
2. High-rise buildings containing an S-2 occupancy shall be provided with a net usable volume of 40,000 gallons.
3. High-rise buildings containing an M occupancy shall be provided with a net usable volume of 50,000 gallons.
4. Multi high-rise complexes that are less than 420 feet in height may share a common secondary water source by combining the highest demand of number 2 or 3 above, with number 1 above. Only one parking/retail area and 2 high-rise buildings may share a common secondary water source.

An acceptable alternative to items 1 through 4 above is to prove a calculated net usable volume capable of meeting the hydraulically calculated sprinkler demand, including the total (combined inside and outside) hose stream requirement, as per NFPA 13. The duration of the calculated source shall have a duration of not less than 30 minutes for buildings with light hazard occupancies only and a 60-minute duration for buildings with ordinary hazard occupancies as defined by NFPA 13.

Exception: Existing buildings, including those undergoing substantial renovation.

23.11.919 International Fire Code Section 919 added – Firefighter Replenishment Air System.

Chapter 9 of the International Fire Code is hereby amended by the addition of a new Section 919 to read as follows:

SECTION 919
FIREFIGHTER AIR REPLENSHMENT SYSTEMS

919.1 Scope. The design, installation, and maintenance of firefighter air replenishment systems shall be in accordance with this section.

919.2 Required installations. Firefighter air replenishment systems shall be installed in the following buildings and structures:

1. Buildings classified as high-rise in accordance with the International Building Code.

2. Transportation tunnels constructed in accordance with NFPA 130 or NFPA 502 that exceed 300 feet in length.

3. Underground pedestrian tunnels that exceed 300 feet in length.

919.3 Certificate of compliance

1. No certificate of occupancy shall be issued for a high-rise building or underground transportation and pedestrian tunnel unless a *certificate of compliance*, as described in section 919.15.3.2, is first issued.
2. The following elements for the life safety system shall be installed in accordance with *approved* plans and specifications and shall be tested, certified and proved to be in proper working condition to the satisfaction of the *fire code official* before issuance of the *certificate of compliance*.

919.4 Firefighter air replenishment system. The firefighter air replenishment system is a complete, self-contained breathing air replenishment system, permanently installed within a structure, consisting of external mobile air connection panels, interior air fill stations, interconnected piping distribution system and an air storage system, and final locations shall be *approved* by the *fire code official*.

919.4.1 Purpose. The firefighter air replenishment system allows firefighters and other first responders to replenish empty breathing air cylinders within close proximity of the incident, reducing the amount of travel distance, time and personnel needed for logistical support, to maximize firefighter safety and effectiveness.

919.4.2 Scope. The design, installation, testing and certification of the firefighter air replenishment system shall be in accordance with this section.

919.4.3 Safety. The firefighter air replenishment system is a life-safety system. The system shall provide a safe and reliable source of clean breathable air to firefighters and other first responders performing fire suppression, evacuation, search and rescue, and other types of emergency response tasks at incidents requiring the use of self-contained breathing apparatus. Nothing within this specification shall be reduced in quality in any manner, including but not limited to system design criteria, system performance criteria, components, materials,

installation procedures, testing procedures, commissioning requirements and certification.

919.4.4 Quality assurance. Plans, specifications, equipment, product data sheets and system calculations for the firefighter air replenishment system shall be prepared, reviewed and stamped by a Washington State licensed engineer knowledgeable and qualified in high pressure breathing air replenishment systems, who can demonstrate prior experience with such systems.

919.4.5 Contractor qualifications. The firefighter air replenishment system shall be installed by a Washington State licensed contractor with a minimum 3 years of experience specializing in fire department high pressure breathing air field. The installation contractor shall have a Bellevue business license.

919.5 Performance and design criteria.

919.5.1 Safety Factor. The firefighter air replenishment system shall allow firefighters to replenish a minimum of two 66 cubic foot breathing air cylinders at 5,500 PSIG simultaneously within two minutes or less. All components of the system shall be rated to operate at a minimum working pressure of 5,500 PSIG at 70^0F with a 4:1 safety factor.

919.5.2 Replenishment Criteria. The air storage system shall be capable of replenishing not less than 50 breathing air cylinders at a rate of 2 simultaneously, each pair within 2 minutes or less (25 repetitions) without fire department supplementation, based on fire department standard breathing air cylinders of 66 cubic feet at 5,500 PSIG.

919.5.3 Design Flow. The interconnected piping distribution system shall have a minimum calculated design flow using one (1) interior fill station and panel, totaling four 66 cubic foot 5,500 PSIG breathing air cylinders operating simultaneously at the farthest point from the fire department access.

919.5.4 Fire Department Augmentation. When air supplementation becomes available by the fire department mobile air unit, the external mobile air connection panel shall allow the mobile air unit operator to connect and begin augmentation of the system, providing for a constant source of breathing air replenishment to all interior fill stations and panels.

919.5.5 Air Storage System Isolation. The interconnected piping distribution system shall be designed so that the external mobile air connection panel may be isolated from the air storage system and routed directly to the interior air fill stations and panels via the system main distribution line. This shall be accomplished through the means of check valves and actuator selector valves readily accessible by fire department personnel, to allow breathing air to be

supplied directly from the fire department mobile air unit to the interior fill stations and panels.

919.6 Permits, plans and fees.

919.6.1 Permits. A permit is required to install and repair a firefighter air replenishment system.

919.6.2 Plans. Prior to the installation of a firefighter air replenishment system, plans, calculations and specifications shall be submitted to the *fire code official* for review and approval in accordance with City of Bellevue permit submittal requirements. Plans and calculations shall be stamped by a Washington State licensed engineer and shall demonstrate compliance with the requirements of this section and demonstrate that the design criteria for all pressure containing components is satisfied with a minimum working pressure of 5,500 PSIG at 700F with a minimum 4:1 safety factor.

919.6.2.1 Mill Reports. The plans submittal shall also include manufacturer mill report for the tubing, fittings, valves, pressure regulators, pressure relief devices, pressure gauges, cylinder filling hoses and all other components that may be required for a complete firefighter air replenishment system installation.

919.6.2.2 Additional Information. The *fire code official* is authorized to require additional information that is necessary for ensuring the proposed design meets the requirements of this section.

919.6.2.3 Approval Required. The installation of the firefighter air replenishment system shall not commence until complete plans, specifications and calculations have been submitted, *approved* and a permit issued by the *fire code official.*

919.6.3 Fees. Fees shall be submitted to the *fire code official* at the time of plan submittal.

919.6.4 Codes and standards. The firefighter air replenishment system shall conform to all current national standards and this Section 919. Construction requirements shall follow the currently adopted editions of the IBC and IFC. Where applicable all components of the firefighter air replenishment system shall meet the minimum requirements of the NFPA, OSHA, ASTM, ASME, ANSI and Bellevue Building, Fire, Plumbing and Mechanical codes.

919.7 System components. All pressurized breathing air components of the firefighter air replenishment system shall be listed by a nationally recognized testing laboratory or agency and *approved* by the *fire code official*. The system shall contain, at a minimum, the following components.

1. External mobile air connection panel;
2. Air storage system;
3. Air monitoring system;
4. Interior air fill station;
5. Interior air fill panel; and
6. Interconnected piping distribution system

919.7.1 Protection. All components of the firefighter air replenishment system shall be protected from physical damage and the piping, storage equipment, monitoring wiring and power wiring shall be separated from the remainder of the building by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or 2-hour *horizontal assemblies* constructed in accordance with Section 711, or both.

Exception: Piping, monitor wiring and power wiring located outside of a 2-hour *fire barrier* construction shall be protected using any one of the following methods:

1. Cables listed in accordance with UL 2196 having a *fire-resistance rating* of not less than 2 hours;
2. Piping or cables encased with not less than 2 inches (51 mm) of concrete; or
3. Electrical circuit protective systems having a *fire-resistance rating* of not less than 2 hours. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

919.7.2. Electrical power. The following features serving the firefighter air replenishment system shall be supplied by both the primary power and *legally required standby power*:

1. Air monitoring system – Section 919.14;
2. Air storage system – Section 919.12.3; and
3. External mobile air connection panel – Section 919.8.6

919.7.3 Materials of construction. All breathing air components used in the construction of the firefighter air replenishment system shall be *listed* by a nationally recognized testing laboratory or agency and *approved* by the *fire code official*. All pressurized components shall be compatible for use with high pressure breathing air equipment and self-contained breathing air apparatus. All pressurized breathing air components shall be rated for a minimum working pressure of 5,500 PSIG at 70^0F with a minimum 4:1 safety factor.

919.7.4 Markings. All components of the firefighter air replenishment system shall be clearly identified by means of stainless steel or plastic labels or tags indicating their function. This shall include as a minimum all fire department

connection panels, air fill stations, air storage system, piping, gauges, valves, air connections, air outlets, enclosures, and doors.

919.8 Exterior fire department connection panel and enclosure.

919.8.1 Location. A minimum of two external mobile air connection panels shall be attached to the building or on a remote monument at the exterior of the building and shall be interconnected to the air monitoring system, air storage system, air fill stations and air fill panels. The external mobile air connection panels shall be secured inside of a weather resistant NEMA 4 enclosure. The panels shall be within 50 feet of an *approved* roadway or driveway, or other location *approved* by the *fire code official*. The enclosures shall be visible and accessible on approach to the building and shall be maintained with a minimum of 6 feet clear distance that provides a 180-degree clear unobstructed access to the front of the panels.

Exception: When the *fire code official* determines that it is impractical to provide two panels, only one external mobile air connection panel will be required

919.8.2 Purpose. The external mobile air connection panel shall provide the fire department mobile air operator access to the firefighter air replenishment system and shall be compatible with the fire department mobile air unit.

919.8.3 Non-metallic materials. When the enclosures are constructed of non-metallic materials, the enclosures shall be resistant to ultraviolet and infrared solar radiation.

919.8.4 Vehicle protection. When the panels are located in an area subject to vehicle traffic, impact protection shall be provided in accordance with *International Fire Code* Section 312.

919.8.5 Enclosure marking. The front of the enclosures shall be marked FIREFIGHTER AIR REPLENSHMENT SYSTEM on a securely attached stainless steel engraved, plastic engraved or painted plate. The lettering shall be in a color that contrasts with the enclosure front and in letters that are a minimum of 2-inches high with 3/8-inch brush stroke. The marking of the enclosures shall be immediately visible and accessible to emergency response personnel.

919.8.6 Enclosure components. The external mobile air connection panel shall contain all of the necessary gauges, isolation valves, pressure relief valves, pressure regulating valves, check valves, tubing, fittings, supports, connectors, adapters, air monitoring displays, tamper devices, storage bypass and other necessary components as may be required to allow the fire department mobile air unit to connect and augment the system with a constant source of breathing air.

919.8.7 Fire department key box. A fire department key box shall be provided adjacent to the external mobile air connection panel and enclosure. A key for the enclosure shall be provided in the key box.

Exception: Subject to the approval of the *fire code official*, the key may be located in a fire department key box that also provides access keys for entry into the building, when it is nearby, the key is clearly marked, and there is sufficient room in the fire department key box.

919.9 Interior air fill station and air fill panel.

919.9.1 Location. Air fill stations shall be installed within buildings and structures as follows:

919.9.2 Above grade structure. An air fill station and enclosure shall be installed on the fifth floor above grade and every third floor thereafter. The air fill station shall be located at an *approved* location between the fire service access elevator and an approved enclosed *interior exit stairway*. Features of the approved stairway shall include access to all above grade floor levels of the building and proximity to the fire service access elevator. The specific location on the floors shall be *approved* by the *fire code official*.

919.9.3 Underground structure. An interior air fill panel shall be located in all required *interior exit stairways* on the floor landing commencing at the second level below grade and every other level below grade thereafter. The panel shall be located a minimum of 36 inches but not more than 60 inches above finished floor or stair landing.

919.9.4 Transportation and pedestrian tunnels. An interior air fill panel shall be located within 200 feet of the tunnel entrance and at intervals not exceeding 400 feet thereafter as *approved* by the *fire code official*. The panel shall be located a minimum of 36 inches but not more than 60 inches above finished floor.

919.9.5 Purpose. Air fill stations shall provide firefighters and other first responders the ability to safely and reliably replenish empty breathing air cylinders.

919.9.6 Performance. Air fill stations shall be capable of replenishing a minimum of two 66 cubic foot, 5,500 PSIG breathing air cylinders at 25 percent capacity within two minutes or less and shall provide for the refilling of breathing air cylinders within a certified rupture fill containment enclosure. The design of the air fill station shall provide for the direct refilling of firefighter breathing air cylinders by means of a discharge outlet with a minimum of one cylinder filling hose that shall have a female quick connect (UAC). The female UAC shall be designed to connect to a male UAC. The assembled UAC shall meet the

construction, performance and dimensional requirements of NFPA 1981, *Standard on Open Circuit Self-Contained Apparatus for Fire and Emergency Services.*

919.9.7 Enclosure requirements. Each air fill station shall be installed within a lockable enclosure (closet or room) by a means *approved* by the *fire code official*. Each enclosure shall be located between the fire service access elevator and an *approved* enclosed *interior exit stairway*. Features of the *approved* stairway shall include access to all above-grade floor levels of the building and proximity to the fire service access elevator.

The door to each enclosure shall be readily visible from the entrance to the *interior exit stairway* and readily accessible at all times by firefighters and other emergency responders and shall be maintained with a minimum of 6 feet clear distance that provides a 180-degree clear unobstructed access to the front of the panels. The enclosure shall have emergency illumination and at least one 120-volt AC duplex grounded receptacle supplied from the building *emergency power system*.

919.9.8 Security. To prevent unauthorized access to or tampering with the system, each air fill station enclosure shall be maintained locked by a means *approved* by the *fire code official*.

919.10 Markings.

919.10.1 Enclosure. Each air fill station enclosure shall be marked FIREFIGHTER AIR REPLENSHMENT SYSTEM on a securely fastened stainless steel engraved, plastic engraved or painted plate. The lettering shall be in a color that contrasts with the cabinet front and in letters that are a minimum of 2-inches high with 3/8-inch brush stroke. The marking of the cabinet shall be immediately visible and accessible to emergency response personnel.

919.10.2 Stairway. Immediately above stairway signage required by *International Fire Code* Section 1023.9 a sign as described in 919.10.1 shall be posted at every door on floors equipped with air fill stations.

919.10.3 Air fill station marking. The front of each air fill station shall be marked FIREFIGHTER AIR REPLENSHMENT SYSTEM on a securely fastened stainless steel engraved, plastic engraved or painted plate. The lettering shall be in a color that contrasts with the cabinet front and in letters that are a minimum of 2-inches high with 3/8-inch brush stroke. The marking of the cabinet shall be immediately visible and accessible to emergency response personnel.

919.11 Air fill station components. The air fill station shall contain all of the necessary gauges, isolation valves, pressure relief valves, pressure regulating valves, check valves, tubing, fittings, supports, connectors, adapters and other

necessary components as may be required to allow firefighters and other first responders to safely and reliably replenish a minimum of two breathing air cylinders within a certified rupture-proof fill containment enclosure and an emergency connect directly to firefighter self-contained breathing apparatus equipment by means of quick fill adapters, hose and UAC fittings.

919.11.1 Purpose. Air fill panels shall provide firefighters and other first responders the ability to safely and reliably replenish empty breathing air cylinders during an emergency incident.

919.11.2 Performance. Air fill panels shall be capable of replenishing a minimum of two 66 cubic foot, 5,500 PSIG breathing air cylinders at 25 percent capacity within two minutes or less and shall provide for the direct refilling of firefighter breathing air cylinders by means of a discharge outlet with a minimum of two cylinder filling hoses that shall have a female quick connect (UAC). The female UAC shall be designed to connect to a male UAC. The assembled UAC shall meet the construction, performance and dimensional requirements of NFPA 1981, *Standard on Open Circuit Self-Contained Apparatus for Fire and Emergency Services.*

919.11.3 Enclosure requirements. Each air fill panel shall be in a cabinet constructed of minimum 18-gauge carbon steel. The depth of the cabinet shall not create an exit obstruction when installed in building stairways. All components, except the control valve, pressure gauges, fill hoses and ancillary components, shall be contained behind a minimum 18-gauge carbon steel interior panel.

919.11.4 Cylinder filling hose. The design of the cabinet shall provide a means for storing the hose to prevent kinking. The brackets shall be installed so that the hose bend radius is maintained at 4 inches (102 mm) or greater when the hose is coiled.

The discharge outlet of each cylinder filling hose shall have a female Rapid Intervention Crew Universal Air Coupling (RIC/UAC). The female fitting shall be designed to connect to a male RIC/UAC. The assembled RIC/UAC shall meet the construction, performance and dimensional requirements of NFPA 1981, *Standard on Open Breathing Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services.*

919.11.5 Door. Hinges for the cabinet door shall be located inside of the cabinet. The door shall be arranged such that when the door is open, it does not reduce the required exit width or create an obstruction in the path of egress. A minimum of 20 percent of the door surface area shall be a relite constructed of tempered glass. The thickness of the glass shall not be greater than 1/8 inch.

919.11.6 Security. To prevent unauthorized access to or tampering with the system, each air fill panel enclosure shall be maintained locked by a means *approved* by the *fire code official.*

919.11.7 Cabinet marking. The front of each panel shall be marked FIREFIGHTER AIR REPLENISHMENT SYSTEM on a securely fastened stainless steel engraved, plastic engraved or painted plate. The lettering shall be in a color that contrasts with the cabinet front and in letters that are a minimum of 2-inches high with 3/8-inch brush stroke. The marking of the cabinet shall be immediately visible and accessible to emergency response personnel.

919.11.8 Air fill panel components. The air fill panel shall contain all of the necessary gauges, isolation valves, pressure relief valves, pressure regulating valves, check valves, tubing, fittings, supports, connectors, adapters and other necessary components as may be required to allow firefighters and other first responders to safely and reliably replenish a minimum of 2 breathing air cylinders connecting directly to firefighter self-contained breathing apparatus equipment by means of quick fill adapters, hose and RIC/UAC fittings.

919.12 Air storage system.

919.12.1 Location. An air storage system shall be installed in buildings and structures at locations *approved* by the *fire code official.*

919.12.2 Purpose. The air storage system along with interior air fill stations and air fill panels shall provide firefighters and other first responders the ability to safely and reliably replenish empty breathing air cylinders prior to the fire department mobile air unit arriving on scene.

919.12.3 Performance. The air storage system shall be capable of replenishing not less than 50 breathing air cylinders at a rate of 2 simultaneously, each pair within 2 minutes or less (25 repetitions) without fire department supplementation. The breathing air cylinders are fire department standard 66 cubic feet at 5,500 PSIG.

919.12.4 Enclosure requirements. The air storage system shall be contained within an enclosure (closet or room) which shall be separated from the remainder of the building by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or 2-hour *horizontal assemblies* constructed in accordance with Section 711, or both. The enclosure shall be sufficiently sized to accommodate all air storage system components. The access door to the enclosure shall be of sufficient size to allow for the maintenance and removal of the air storage system. The enclosure shall be conditioned so that the temperature is no less than 40^0F or more than 80^0F and shall have an engineered pressure relief vent for over-pressurization in the event of component failure. The enclosure shall

have emergency illumination and at least one 120-volt AC duplex grounded receptacle supplied from the building *emergency power system*.

919.12.5 Security. To prevent unauthorized access to or tampering with the air storage system, the enclosure shall be maintained locked by a means *approved* by the *fire code official*.

919.12.6 Enclosure marking. The air storage enclosure shall be marked FIREFIGHTER AIR REPLENSHMENT SYSTEM on a securely fastened stainless steel engraved, plastic engraved or painted plate. The lettering shall be in a color that contrasts with the cabinet front and in letters that are a minimum of 2-inches high with 3/8-inch brush stroke. The marking of the enclosure shall be immediately visible and accessible to emergency response personnel.

919.12.7 Air storage system marking. The air storage system shall be marked FIREFIGHTER AIR REPLENSHMENT SYSTEM on securely fastened stainless steel engraved, plastic engraved or painted plates. The lettering shall be in a color that contrasts with the system components and in letters that are a minimum of 2-inches high with 3/8-inch brush stroke.

919.13 Piping, distribution materials and methods.

919.13.1 Prohibition. The use of carbon steel, iron pipe, malleable iron, high-strength gray iron, alloy steel, copper or plastic for pressurized breathing air components is prohibited.

919.13.2 Materials of construction. All components of the piping distribution system shall be protected from physical damage and shall be separated from the remainder of the building by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or 2-hour *horizontal assemblies* constructed in accordance with Section 711, or both.

All pressurized materials used in the construction of the piping distribution system shall be compatible for use with high pressure breathing air equipment and self-contained breathing apparatus. All pressurized breathing air components shall be rated for a minimum working pressure of 5,500 PSIG with a minimum 4:1 safety factor. The internal surfaces of all pressurized material shall be free of contamination.

919.13.3 Tubing. Tubing shall be constructed of stainless-steel materials that are compatible with high pressure breathing air. When stainless steel tubing is used, it shall meet ASTM A-269, Grade 316 or an equal standard. Stainless steel tubing shall be a minimum .375 outside diameter x .065 wall Grade 316 fully annealed seamless. Stainless steel tubing shall be at least Grade 316 and shall meet the requirements of ASTM A-479 or equal. Routing of tubing and bends shall be such as to protect the tubing from mechanical damage.

919.13.4 Securement. Tubing shall be supported at a maximum of five-foot intervals. Individual tubing clamps and mounting components shall be mechanically secured to the building structural support members in accordance with the manufacturer's specifications and the applicable Bellevue Plumbing and Mechanical codes.

919.13.5 Marking. All tubing shall be clearly marked FIREFIGHTER AIR REPLENSHMENT SYSTEM and HIGH-PRESSURE BREATHING AIR using double-sided engraved 3-inch x 1-inch stainless steel or plastic markers placed at a minimum of 10-foot intervals and at each floor level whether concealed or not.

919.13.6 Fittings. Fittings shall be constructed of stainless-steel materials that are compatible with high-pressure breathing air. Stainless steel fittings shall be at least Grade 316 and meet the requirements of ASTM A-479 or an equal standard and rated to the maximum working pressure of the tubing used.

919.13.7 System assembly requirements. The piping distribution system shall be a welded system, except where the tubing joints are readily accessible and at the point of connection to the individual air fill stations. Welding procedures shall follow nationally recognized standards. Prior to and during the welding of sections of tubing, a continuous, regulated argon purge at 3 PSIG shall be maintained to eliminate contamination with products of the oxidation or welding flux. The purge shall commence a minimum of 2 minutes prior to welding operations and continue until the welded joint is at ambient temperature of 72°F. When mechanical high-pressure tube fittings are used, they shall be listed for the type of materials to be joined and rated for the maximum pressure of the system. When mechanical tube fittings are used, prior approval by the *fire code official* must be obtained. All concealed mechanical fittings for tubing and valves shall be readily accessible by means of a 90-minute *fire-resistance-rated*, *self-closing*, *self-latching fire door*. Each *fire door* shall be provided with a fire department *approved* locking system. Where tubing passes through *fire-resistance rated* construction, it shall be protected by a sleeve at least three times the tube diameter. Penetrations of *fire-resistance-rated* assemblies shall comply with *International Building Code* Section 714.

919.13.8 Prevention of contamination. The installing contractor shall ensure that, at all times, the system components are not exposed to contaminants, including but not limited to, oils, solvents, dirt and construction materials. When known or suspected contamination of system components has occurred, the affected component shall not be installed in the system. The installation shall also conform to engineering standard of care.

919.14 Air monitoring system. An *approved* air monitoring system shall be provided. The system shall automatically monitor air quality, moisture and pressure on a continual basis.

The air monitoring system shall be equipped with not less than two content analyzers capable of detecting carbon monoxide, carbon dioxide, nitrogen, oxygen, moisture and hydrocarbons. The air monitoring system shall be connected to the building fire alarm system as a supervisory alarm.

The air monitoring system shall transmit a supervisory signal when any of the following levels are detected:

1. Carbon monoxide exceeds 5 ppm;
2. Carbon dioxide exceeds 1,000 ppm;
3. An oxygen level below 19.5 percent or above 23.5 percent;
4. A nitrogen level below 75 percent or above 81 percent;
5. Hydrocarbon (condensed) content exceeds 5 milligrams per cubic meter of air;
6. The moisture concentration exceeds 24 ppm by volume; or
7. The pressure falls below 4,950 PSIG at 70°F

The air quality and pressure status shall be displayed at the fire command center, within the exterior mobile air connection panel and at the air storage system. The building owner or authorized agent shall notify the fire department and testing contractor of any alarm signaling a rise in moisture or carbon monoxide levels within the system.

919.15 Final testing, inspection and commissioning.

919.15.1 All components of the firefighter air replenishment system shall be pre-inspected and tested for proper assembly and operation prior to a functional fire department test and inspection.

919.15.2 Testing procedures.

919.15.2.1 Pneumatic Testing. Following fabrication, assembly, and installation of the piping distribution system, exterior connection panel and interior cylinder fill panels, the *fire code official* shall witness the pneumatic testing of the complete system at a minimum test pressure of 6,050 PSIG using oil-free dry air, nitrogen or argon. A minimum 24-hour pneumatic test shall be performed. During this test all fittings, joints and system components shall be inspected for leaks. A solution compatible with the system component materials shall be used on each joint and fitting to detect any leaks. Any system defects or detected leaks shall be documented on an inspection report and either repaired or replaced.

As an alternate, a pressure decay test in accordance with ASME B31.3 is allowed. A test of the low-pressure monitoring switch shall be performed. Each air fill panel shall be tested for compatibility with the fire department self-contained breathing apparatus (SCBA) RIC/UAC. The pipe or tubing manufacturer mill report shall be provided to the *fire code official*.

919.15.2.2 Low Pressure Monitor Calibration. Upon the successful completion of the twenty-four-hour pressure test, the system low pressure monitor shall be calibrated to not less than 4,950 PSIG descending and tested to verify that the signal is annunciated at the building main fire alarm panel.

919.15.2.3 Grade D Breathing Air Verification. A minimum of two air samples shall be taken from separate air fill stations and submitted to an independent certified gas analyst laboratory to verify the system cleanliness and that the air meets all applicable standards for breathing air systems to include, but not limited to 1) NFPA 1500; 2) NFPA 1989 Standard on Breathing Air Quality for Emergency Services Respiratory Protection; and 3) OSHA Standard 29 CFR 1910.134(i)(1) – Grade D Breathing Air.

The laboratory shall submit a written report to the testing contractor and the *fire code official* documenting the air analysis complies with the above requirements.

919.15.2.4 Air Fill Station Inlets Secured During Testing. During the period of air quality analysis, the air fill stations inlets shall be secured so that no air can be introduced into the system and each air fill station shall be provided with a sign stating, "AIR QUALITY ANALYSIS IN PROGRESS, DO NOT FILL OR USE ANY AIR FROM THIS SYSTEM." This sign shall be a minimum of 8-1/2 X 11 inch with a minimum of 1-inch lettering.

919.15.2.5 Mobile Air Unit Compatibility Verification. Each external mobile air connection panel shall be tested for compatibility with the fire department mobile air unit.

919.15.2.6 SCBA Compatibility Verification. Each air fill station and air fill panel shall be tested for compatibility with the fire department self-contained breathing cylinders and apparatus.

919.15.2.7 Performance Criteria Verification. The air storage system shall be tested for its ability to meet the performance criteria outlined in section 919.12.3.

919.15.2.8 Air Monitoring System Testing. The air monitoring system shall be tested for the capability to meet the requirements of this section.

919.15.2.9 Commissioning Closeout. Upon successful completion of all testing procedures, the system shall be filled to normal operating pressure of 5,500 PSIG, all control valves shall be placed in their normal operating position, and all doors shall be secured and locked. Five sets of keys properly identified shall be provided to the fire department.

919.15.3 System acceptance and final commissioning.

919.15.3.1 Certification. A certificate documenting that the entire firefighter air replenishment system has been installed, tested and commissioned in accordance with this Section 919 and the *approved* plans shall be stamped by a Washington State licensed engineer and submitted to the *fire code official*.

919.15.3.2 Final acceptance. Prior to the final acceptance of the firefighter air replenishment system and issuance of the certificate of occupancy, the building owner or authorized agent shall provide for the regular testing and certification of the firefighter air replenishment system. Written verification of regular testing and certification shall be provided to the fire department.

919.15.3.3 Regular testing and certification. The firefighter air replenishment system shall be continuously maintained in an operative condition and shall be inspected not less than annually.

This shall include verifying the system compatibility with the fire department mobile air unit and self-contained breathing apparatus, and shall include verifying the system ability to maintain 5,500 PSIG working pressure at 70^0F with a 4:1 safety factor, the operability of the low-pressure monitor, air monitoring system and the system ability to comply with the air quality requirements of this section. The building owner, authorized agent or testing contractor shall notify the fire department of any scheduled test of the system. On a quarterly basis two air samples shall be taken from two separate air fill stations and tested to verify compliance with NFPA 1989. The laboratory test results shall be maintained on site and readily available for review by the fire department.

Point of Information
Annual test reports shall be submitted online via www.TheComplianceEngine.com within 5 business days after completing the test.

919.15.3.4 Final commissioning. Upon satisfactory completion of all testing procedures, receipt of the Washington State licensed engineer's stamped certification, verification of a regular testing and maintenance contract, and fire department training (unless waived by the fire department), the system shall be considered complete. The firefighter air replenishment system shall then be considered ready for use by firefighters and other first responders in an emergency incident.

919.16 Special requirements. Any modification or changes to components contained within or to the "systems" described in this section shall be requested through the *fire code official* and *approved* in writing. This condition does not prohibit

emergency repairs; however, a written report of the emergency repairs and testing is required to be submitted by the testing and certification contractor.

23.11.1008.3.4 International Fire Code Section 1008.3.4 amended – Duration.

International Fire Code Section 1008.3.4 is hereby amended to read as follows:

1008.3.4 Duration. The emergency power system shall provide power for a duration of not less than 90 minutes, or such time as stipulated by Section 2702 and Table 2702 when applicable for high-rise or underground buildings, and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with International Building Code Section 2702.

23.11.1010.1.6 International Fire Code Section 1010.1.6 amended – Thresholds.

International Fire Code Section 1010.1.6 is hereby amended to read as follows:

1010.1.6 Thresholds. Thresholds at doorways shall not exceed 3/4 inch (19.1 mm) in height above the finished floor or landing for sliding doors serving *dwelling units* or 1/2 inch (12.7 mm) above the finished floor or landing for other doors. Raised thresholds and floor level changes greater than 1/4 inch (6.4 mm) at doorways shall be beveled with a slope not greater than one-unit vertical in two units horizontal (50-percent slope).

Exceptions:

1. In occupancy Group R-2 or R-3, threshold heights for sliding and side-hinged exterior doors shall be permitted to be up to 7 3/4 inches (197 mm) in height if all of the following apply:

    1.1. The door is not part of the required *means of egress*.

    1.2. The door is not part of an *accessible route* as required by Chapter 11.

    1.3. The door is not part of an *Accessible unit*, *Type A unit* or *Type B unit*.

2. In Type B units, where Exception 5 to Section 1010.1.5 permits a 4-inch (102 mm) elevation change at the door, the threshold height on the exterior side of the door shall not exceed 4 3/4 inches (120 mm) in height above the exterior deck, patio or balcony for sliding doors or 4 1/2 inches (114 mm) above the exterior deck, patio or balcony for other doors.

3. Thresholds at doors serving non-occupiable transformer rooms where emergency containment of oil and sprinkler water is required.

23.11.1011.12.2 International Fire Code Section 1011.12.2 amended – Roof access.

Section 1011.12.2 of the International Fire Code is hereby amended to read as follows:

1011.12.2 Roof access. Where a stairway is provided to a roof, access to the roof shall be provided through a penthouse complying with Section 1510.2 of the International Building Code.

Exception: In buildings without an occupied roof, access to the roof shall be permitted to be a roof hatch or trap door not less than 16 square feet in area and having a minimum dimension of 3 feet.

23.11.1026 International Fire Code added – Fire Alarm and Sprinkler zones

Section 1026 of the International Fire Code is hereby amended by the addition of a new section 1026.6 – Fire Alarm and Sprinkler Zones

1026.6 Fire Alarm and Sprinkler Zones. When horizontal exits are provided the fire alarm and sprinkler systems shall be zoned to coincide with the horizontal exits.

Exception: Sprinkler zoning is not required in existing construction if fire alarm initiating devices provide the same level of occupant notification that a zoned sprinkler system would provide.

23.11.1103.2 International Fire Code Section 1103.2 amended – Emergency responder communication coverage in existing buildings.

Section 1103.2 of the International Fire Code is hereby amended to read as follows:

1103.2 Emergency responder communication coverage in existing buildings.

Buildings constructed prior to the implementation of this code shall not be required to comply with the emergency responder radio coverage provisions except as follows:

1. Whenever an existing wired communication system cannot be repaired or is being replaced.
2. Buildings identified in Section 510.1 undergoing substantial alteration as determined by the *Fire code official*.
3. When buildings, classes of buildings or specific occupancies do not have minimum radio coverage signal strength as identified in Section 510.4.1 and the Fire or Police Chief determines that lack of minimum signal strength poses an undue risk to emergency responders that cannot be reasonably mitigated by other means.

23.11.1103.11 International Fire Code Section 1103.11 added – Building information card.

Chapter 11 of the International Fire Code is hereby amended by the addition of a new Section 1103.11 to read as follows:

Building Information Cards complying with Public Information Sheet F-72 or as hereafter amended shall be provided in every high-rise building, hospital and R occupancies where multiple buildings are located on a common podium.

Building Information Cards shall be located in each fire command center when provided. If no fire command center exits, the Building Information Cards shall be located in an *approved* location near the Fire Alarm Control Panel. The Building Information shall include, but is not limited to, the information specified in 1103.11.1 through 1103.11.7.

1103.11.1 General Building Information. General building information that includes: property name, address, the number of floors in the building above and below grade, use and occupancy classification (for mix uses, identify the different types of occupancies on each floor) and the estimated building population during the day, night and weekend;

1103.11.2 Building Emergency Contact Information. Building emergency contact information that includes: a list of the building's emergency contacts including but not limited to building manager, building engineer and their respective work phone number, cell phone number and e-mail address;

1103.11.3 Building Construction Information. Building construction information that includes: the type of building construction including but not limited to floors, walls, columns and roof assembly;

1103.11.4 Exit Stairway Information. Exit access stairway and exit stairway information that includes; number of exit access stairways and exit stairways in building; each exit access stairway and exit stairway designation and floors served; location where each exit access stairway and exit stairway discharges, interior exit stairways that are pressurized; exit stairways provided with emergency lighting; each exit stairway that allow reentry; exit stairways providing roof access; elevator information that includes: number of elevator banks, elevator bank designation, elevator car numbers and respective floors that they serve; location of elevator machine rooms, control rooms and control spaces; location of sky lobby; and location of freight elevator banks;

1103.11.5 Building Services and System Information. Building services and system information that includes: location of mechanical rooms, location of building management system, location and capacity of all fuel oil tanks, location of emergency generator and location of natural gas service;

1103.11.6 Fire Protection System Information. Fire protection system information that includes: location of standpipes, location of fire pump room, location of fire department connections, floors protected by automatic sprinklers and location of

different types of automatic sprinkler systems installed including but not limited to dry, wet and pre-action;

1103.11.7 Hazardous Material Information. Hazardous material information that includes: location and quantity of hazardous material.

23.11.1107 International Fire Code Section 1107 added – Premises identification.

Chapter 11 of the International Fire Code is hereby amended by the addition of a new Section 1107 to read as follows:

SECTION 1107

PREMISES IDENTIFICATION

1107.1 Premises Identification. Premise Identification for existing buildings shall be in accordance with section 505 of this code.

23.11.1203.1 International Fire Code Section 1203.1 amended – Emergency and standby power systems.

Section 1203.1 of the International Fire Code is hereby amended as follows:

1203.1 General. Emergency power systems and standby power systems required by this code shall comply with International Building Code chapter 27 as amended by the City of Bellevue.

23.11.2306.2.3 International Fire Code Section 2306.2.3 amended – Above-ground tanks located outside, above grade.

Section 2306.2.3 of the International Fire Code is hereby amended to read as follows:

2306.2.3 Above-ground tanks located outside, above grade. Above-ground tanks shall not be used for the storage of Class I, II or IIIA liquid fuels except as provided by this section.

1. The storage of Class I and Class II liquids in above ground tanks outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited. Districts for which this prohibition applies include areas zoned as other than LI (Light Industrial) and GC (General Commercial) as defined in City of Bellevue Land Use Code and designated on the City's official zoning map.
2. Above-ground tanks used for outside, above-grade storage of Class I liquids shall be listed and labeled as protected above-ground tanks in accordance with UL 2085 and shall be in accordance with Chapter 57. Such tanks shall be located in accordance with Table 2306.2.3.

3. Above-ground tanks used for outside, above-grade storage of Class II or IIIA liquids shall be listed and labeled as protected above-ground tanks in accordance with UL 2085 and shall be installed in accordance with Chapter 57. Tank locations shall be in accordance with Table 2306.2.3.

   Exception: Other above-ground tanks that comply with Chapter 57 where *approved* by the *fire code official*.

4. Tanks containing fuels shall not exceed 12,000 gallons (45,420 L) in individual capacity or 48,000 gallons (181,680 L) in aggregate capacity. Installations with the maximum allowable aggregate capacity shall be separated from other such installations by not less than 100 feet (30,480 mm).

5. Tanks located at farms, construction projects, or rural areas shall comply with Section 5706.2.

6. Above-ground tanks used for outside above-grade storage of Class IIIB liquid motor fuel shall be listed and labeled in accordance with UL 142 or listed and labeled as protected above-ground tanks in accordance with UL 2085 and shall be installed in accordance with Chapter 57. Tank locations shall be in accordance with Table 2306.2.

23.11.3303.7 International Fire Code Section 3303.7 amended – Job shacks and other temporary structures.

Section 3303.7 of the International Fire Code is hereby added to read as follows:

3303.7 Job shacks and other temporary structures. Job shacks and other temporary structures located within or less than 20' from the permanent building shall be:

- Constructed of non-combustible materials or 1-hour fire-resistive construction.
- Shall not be equipped with fuel fired heaters.
- Shall be equipped with monitored fire alarm system when located below grade.
- Shall not function as offices unless protected with automatic sprinkler systems.

23.11.3303.8 International Fire Code Section 3303 amended – Additional Requirements for wood-frame buildings more than 50,000 sf. in area.

3303.8 Additional Requirements for wood-frame buildings more than 50,000 sf. in area.

3303.8.1 Job Site Security. The job site shall be secured with controlled access once above grade combustible construction has begun together with off hours guard service, motion-controlled surveillance or both.

3303.8.2 Construction mitigations for wood frame buildings exceeding 80,000 s.f. when exposures exists within 60' of a building under construction. The exterior wall of the building under construction shall be covered with 5/8-inch gypsum sheathing to include windows, doors or other openings until interior framing members have been covered with gypsum board or their finish materials.

For the purpose of measuring total square footage of wood framing, any adjacent on-going wood frame construction is considered to be within the project when adjacent structures are separated by less than sixty (60) feet of open air.

Exception: A mitigation plan developed by a Washington State Licensed Fire Protection Engineer. The mitigation plan may rely on temporary, permanent and/or active measures.

3303.8.3 Construction mitigations for wood frame buildings exceeding three hundred fifty thousand square feet; or two hundred thousand square feet when the building exceeds fifty feet in height:

Mitigating fire protection barriers consisting of at least one layer of 5/8-inch gypsum board or other equivalent fire resistive materials shall be installed such that the mitigating fire protection barrier(s) enclose area(s) of not more than fifty thousand square feet.

For the purpose of measuring total square footage of wood framing, any adjacent on-going wood frame construction is considered to be within the project when adjacent structures are separated by less than sixty (60) feet of open air.

Exception: A mitigation plan developed by a Washington State Licensed Fire Protection Engineer. The mitigation plan may rely on temporary, permanent and/or active measures.

23.11.5003.9 International Fire Code Section 5003.9 amended – General safety.

Section 5003.9 of the International Fire Code is hereby amended to read as follows:

5003.9 International Fire Code Section 5003.9 – General safety precautions. General precautions for the safe storage, handling or care of hazardous materials shall be in accordance with Sections 5003.9.1 through 5003.9.11.

23.11.5003.9.11 International Fire Code Section 5003.9.11 added – Manufacturer's limitations.

Section 5003.9 of the International Fire Code is hereby amended by the addition of a new section 5003.9.11 to read as follows:

5003.9.11 International Fire Code Section 5003.9.11 – Manufacturer's Limitations. The storage and use of hazardous materials shall not exceed the manufacturer's limitations on shelf life and any other restrictions on use.

23.11.5307.3 International Fire Code Section 5307.3 amended – Insulated liquid carbon dioxide or nitrogen system used in beverage dispensing applications.

Section 5307.3 of the International Fire Code is hereby amended to read as follows:

5307.3 Insulated liquid carbon dioxide or nitrogen systems used in beverage dispensing applications. Insulated liquid carbon dioxide or nitrogen systems with more than 100 pounds (45.4 kg) of carbon dioxide or nitrogen used in beverage dispensing applications shall comply with Section 5307.3.1.

5307.3.1 Ventilation. Where insulated liquid carbon dioxide or nitrogen storage tanks, cylinders, piping and equipment are located indoors, rooms or areas containing storage tanks, cylinders, piping and equipment, and other areas where a leak of carbon dioxide or nitrogen is expected to accumulate, shall be provided with mechanical ventilation in accordance with Section 5004.3 and designed to maintain the room containing carbon dioxide or nitrogen at a negative pressure in relation to the surrounding area.

Exception: A gas detection system complying with Section 5307.3.2 shall be permitted in lieu of mechanical ventilation.

5307.3.2 Gas detection system. Where ventilation is not provided in accordance with Section 5307.3.1, a gas detection system shall be provided in rooms or indoor areas and in below-grade outdoor locations with insulated carbon dioxide or nitrogen systems. Carbon dioxide or nitrogen sensors shall be provided within 12 inches (305 mm) of the floor in the area where the gas is expected to accumulate or other *approved* locations.

The system shall be designed as follows:

1. Activates an audible and visible supervisory alarm at a normally attended location upon detection of a carbon dioxide or nitrogen concentration of 5,000 ppm (9000 mg/m3).
2. Activates an audible and visible alarm within the room or immediate area where the system is installed upon detection of a carbon dioxide or nitrogen concentration of 30,000 ppm (54 000 mg/m3).

23.11.5601.2.2 International Fire Code Section 5601.2.2 amended – Sale and retail display.

Section 5601.2.2 of the International Fire Code is hereby amended to read as follows:

5601.2.2 Explosives, Explosive Materials or Fireworks Sale. It is illegal to offer for sale explosives, explosive materials or fireworks.

Exceptions:

1. The Fire Marshal is authorized to allow sales of explosives or explosive materials for activities such as demolition activities and fireworks for permitted public displays.

2. The use by law enforcement or emergency response agencies of devices that may fall within the definition of explosives, explosive materials or the definition of fireworks, when such devices are to be used in the furtherance of law enforcement or emergency response operations or training.

3. For the purposes of this chapter, small arms ammunition, small arms ammunition primers, smokeless powder not exceeding fifty pounds, and black powder not exceeding five pounds shall not be defined as explosives, unless possessed or used for a purpose inconsistent with small arms use or other lawful purpose.

23.11.5601.2.3 International Fire Code Section 5601.2.3 amended – Permit restrictions.

Section 5601.2.3 of the International Fire Code is hereby amended to read as follows:

5601.2.3 International Fire Code Section 5601.2.3 – Permit restrictions. The storage of explosive materials is prohibited within the limits of the City. The *fire code official* is authorized to limit the quantity of fireworks permitted at a given location. No person, possessing a permit for storage of fireworks at any place, shall keep or store an amount greater than authorized in such permit. Only the kind of fireworks specified in such a permit shall be kept or stored.

23.11.5601.9 International Fire Code Section 5601.9 added – Violations and penalties.

Chapter 56 of the International Fire Code is hereby amended by the addition of a new Section 5601.9 to read as follows:

5601.9 Violations and penalties. Violations of BCC 23.11.5601.2.2 or BCC 23.11.5608.2 may be prosecuted as a civil violation under Chapter 1.18 BCC.

23.11.5608.2 International Fire Code Section 5608.2 amended – Fireworks discharge prohibited.

Section 5608.2 of the International Fire Code is hereby amended to read as follows:

5608.2 Fireworks Discharge Prohibited. No person shall ignite or discharge any fireworks at any time.

Exceptions:

1. Displays authorized by permit issued by the city pursuant to RCW 70.77.260(2) now or as hereafter amended;

2. Use by a group or individual for religious or other specific purposes on an *approved* date at an *approved* location pursuant to a permit issued pursuant to RCW 70.77.311(2)(c) now or hereafter amended and (d);

3. Use of trick and novelty devices as defined in WAC 212-17-030, as amended, and as hereafter amended and use of agricultural and wildlife fireworks as defined in WAC 212-17-045, as amended and as hereafter amended.

23.11.5608.2.3 International Fire Code Section 5608.2.3 added – Standards for fireworks displays.

Section 5608.2 of the International Fire Code is hereby amended by the addition of a new subsection 5608.2.3 to read as follows:

5608.2.3 Standards for fireworks displays. All fireworks displays shall conform to the following minimum standards and conditions:

A. All fireworks displays must be planned, organized, and discharged by a state-licensed pyrotechnician.

B. A permit must be obtained from the city and *approved* by the fire chief or designee prior to any display of fireworks. The permit shall include the name of the applicant and his address, the name of the pyrotechnician and his address, the exact location, date and time of the proposed display, the number, type and class of fireworks to be displayed, and the manner in which the fireworks are being stored prior to the public fireworks display.

C. The applicant for a display of fireworks permit shall include with the application evidence of a bond issued by an authorized surety or a certificate of public liability insurance. Such bond or certificate shall conform to the requirements set forth in RCW 70.77.285 and 70.77.355.

D. A drawing shall be submitted with the application to the fire chief showing a plan view of the fireworks discharge site and the surrounding area within a 500-foot radius. The drawing shall include all structures, fences, barricades, streets, fields, streams, and any other significant factors that may be subjected to ignition or that may inhibit firefighting capabilities.

E. When, in the discretion of the fire chief, such requirement is necessary to preserve the public health, safety and welfare, the permit may, at the direction of the fire chief or designee, require that a Bellevue fire pumper and a minimum of three firefighters shall be on site 30 minutes prior to and after the conclusion of the display. All compensation for fire personnel and apparatus will be paid by the applicant in an amount calculated according to the Washington State Fire Chiefs Association's fee schedule and shall be designated to the Bellevue fire department.

F. All combustible debris and trash shall be removed by the applicant from the area of discharge for a distance of 300 feet in all directions.

G. Applicant shall dispose of all unfired or "dud" fireworks in a safe manner.

H. Applicant shall provide the fireworks discharge site a minimum of two 2A-rated pressurized water fire extinguishers and one fire blanket.

I. The permit may be immediately revoked at any time deemed necessary by the fire chief or designee due to any noncompliance or weather conditions such as extremely low humidity or wind factor. The display may also be canceled by accidental ignition of combustible or flammable material in the vicinity due to fall debris from the display.

J. Areas of public access shall be determined by the fire chief or designee and maintained by the applicant in an *approved* manner.

K. For displays other than the 4th of July, the permit application must also include a public notification plan for affected residents or businesses. This may include newspaper, radio, and/or television announcements; door to door distribution of written announcements; reader boards and/or other methods or media. The public notification plan is subject to approval by the fire chief or designee. Costs associated with public notification to affected residents are to be borne by the permit applicant.

23.11.5704.2.7.2 International Fire Code Section 5704.2.7.2 amended – Pressure limitations for tanks.

Section 5704.2.7.2 of the International Fire Code is hereby amended to read as follows:

5704.2.7.2 Pressure limitations for tanks. Tanks shall be designed for the pressures to which they will be subjected in accordance with NFPA 30. If the static head with a vent pipe filled with oil exceeds 10 pounds per square inch (psi) (69 kPa), the tank shall be designed for the maximum static head that will be imposed.

23.11.5704.2.9.6.1 International Fire Code Section 5704.2.9.6.1 amended – Locations where above-ground tanks are prohibited or restricted.

Section 5704.2.9.6.1 of the International Fire Code is hereby amended to read as follows:

5704.2.9.6.1 Locations where above-ground tanks are prohibited or restricted. Storage of Class I and II liquids in above-ground tanks outside of buildings is prohibited unless screened in accordance with the City of Bellevue Land Use Code (LUC) Section 20.20.525 as now or hereafter amended.

Exception: Areas zoned as LI (Light Industrial) and GC (General Commercial) as defined in the LUC and designated on the City's official zoning map.

23.11.5704.2.13 International Fire Code Section 5704.2.13 amended – Abandonment and status of tanks.

Section 5704.2.13 of the International Fire Code is hereby amended to read as follows:

5704.2.13 Tanks taken out of service shall be removed in accordance with Section 5704.2.14, or safeguarded in accordance with Sections 5704.2.13.1 through 5704.2.13.2.3 and American Petroleum Institutes (API) 1604.

Residential heating oil tanks required by this code to be removed or decommissioned shall also comply with Public Information Sheet F-07 Decommissioning Residential Heating Oil Tanks and any future revision to this document.

23.11.5707 International Fire Code Section 5707 amended – On-Demand Mobile Fueling Operations

Section 5707 of the International Fire Code is hereby amended to read as follows:

SECTION 5707 ON-DEMAND MOBILE FUELING OPERATIONS

5707.1 General. On-demand mobile fueling operations that dispense Class I, II and III liquids into the fuel tanks of motor vehicles is prohibited.

Exception: Fueling from an *approved* portable container in cases of an emergency or for personal use.

23.11.6104.2 International Fire Code Section 6104.2 amended – Maximum capacity.

Section 6104.2 of the International Fire Code is hereby amended to read as follows:

6104.2 Maximum Capacity. Within the limits established by law restricting the storage of liquefied petroleum gas for the protection of heavily populated or congested commercial areas, the aggregate capacity of any one installation shall not exceed 2,000 gallons water capacity, except that in particular installations this capacity limit may be altered at the discretion of the chief after consideration of special features such as topographical conditions, nature of occupancy and proximity to buildings, capacity of proposed tanks, degree of private fire protection to be provided, and facilities of the local fire department. The storage of liquefied petroleum gas shall conform to the provisions of the local zoning ordinance. Districts for which this prohibition applies includes areas zoned as other than LI (Light Industrial) and GC (General Commercial) as defined in the City of Bellevue Land Use Code and designated on the City's official zoning map.

SECTION 3. Severability. If any section, subsection, paragraph, sentence, clause, or phrase of this Ordinance is declared unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining parts of this ordinance.

SECTION 4. This Ordinance shall take effect and be in force five (5) days after its passage and publication.

Passed by the City Council this 4th day of MARCH, 2024 and signed in authentication of its passage this 4th day of MARCH, 2024.

(SEAL)

CITY OF BELLEVUE CORPORATE SEAL 1953 WASHINGTON

Lynne Robinson, Mayor

Approved as to form:
Kathryn L. Gerla, City Attorney

Soojin Kim, Assistant City Attorney

Attest:

Charmaine Arredondo, City Clerk

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