

**BRIGHTON CITY COUNCIL ORDINANCE**

**ORDINANCE NO.** \_\_\_\_\_

**INTRODUCED BY:** \_\_\_\_\_

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BRIGHTON, COLORADO, AMENDING CHAPTER 9 OF THE BRIGHTON MUNICIPAL CODE BY THE ADDITION OF A NEW ARTICLE 9-36, ESTABLISHING CERTAIN REQUIREMENTS AND PROCEDURES FOR PUBLIC SAFETY RADIO AMPLIFICATION SYSTEMS IN THE CITY OF BRIGHTON.**

**WHEREAS**, Article II, Section 2.3(G) of the City of Brighton Charter authorizes the City Council to adopt ordinances and resolutions necessary or desirable for the general health, safety and welfare of the citizens of Brighton; and

**WHEREAS**, the City Council has determined that it is in the best interests of the general health, safety and welfare of the citizens of Brighton to establish certain requirements and procedures for the installation, testing, operation and maintenance of Public Safety Radio Amplification Systems within the City as provided herein; and

**WHEREAS**, the City Council finds that implementing the provisions of this Article shall serve to protect persons and property within the City; shall preserve and protect property values within the City; shall enhance safety; and shall otherwise serve to protect the health, safety and welfare of emergency responders and the public at large within the City.

**NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BRIGHTON, COLORADO, AS FOLLOWS:**

**Section 1.** Chapter 9 of the Brighton Municipal Code is hereby amended by the addition of a new Article 9-36, establishing Public Safety Radio Amplification Systems and Procedures for the City of Brighton ("PSRS"), to read as follows:

**Section 9-36-10. Purpose.** The purpose of the PSRS shall be to provide minimum standards to ensure a reasonable degree of reliability for emergency services communications from within certain buildings and structures within the City, and to and from emergency communication centers in cases of emergency. Except as otherwise provided in this Article, it is the responsibility of the emergency service provider(s) within the City to deliver the communications signal to, and receive the signal from, such buildings or structures. For purposes of this Article, emergency service providers within the City shall mean the Brighton Police Department and Brighton Fire Department, although additional providers may be designated by the City Council from time to time.

**Section 9-36-20. Scope.** The provisions of this Article shall apply to:

- a) New buildings and structures of Type I, Type II or Type III construction greater than 50,000 square feet, or additions or modifications to such buildings or structures that result in the building or structure being greater than 50,000 square feet.
- b) All basements over 10,000 square feet with a design occupant load greater than fifty (50), regardless of the kind or type of occupancy.
- c) Existing buildings and structures of any size or construction type that have been determined by the Police Chief and the Fire Chief to lack adequate radio coverage for emergency service providers, and that said lack of adequate radio coverage either constitutes a special hazard to occupants or emergency responders, or would otherwise likely result in the unduly difficult conduct of emergency communications and operations.
- d) For purposes of this section, fire walls shall not be used to define separate buildings.

**Section 9-36-30. Building Radio Coverage.** Except as may be otherwise provided in this Article, no person shall erect, construct, or modify any building or structure within the City, or any part thereof, or cause or permit the same to be done, which fails to provide adequate radio coverage for emergency service providers within the City.

- a) After a building permit has been issued for a building or structure within the City, upon request by the owner or the owner's agent, the Police Department and/or the Fire Department shall, within ten (10) to fourteen (14) business days thereafter, conduct such measurements and perform such tests as may be necessary to identify the frequency range or ranges that must be supported by or within said building or structure, such as will provide adequate radio coverage for emergency service providers.
- b) In the event that an emergency service provider modifies its communications equipment in any way that impairs such provider's ability to communicate with an existing system installed, tested and approved in accordance with this Article, such emergency service provider shall be responsible for all reasonable costs associated with reestablishing reliable emergency radio communication with the affected building or structure.
- c) Adequate radio coverage standards for emergency service providers requires, at a minimum:
  - 1) That on each floor of the building or structure, 85% of valid frequency or radio communications tests conducted in accordance with this

Article result in reliable and intelligible two-way communications between the appropriate dispatch center and the individual testing frequency or radio communications within the building or structure; and

2) That 100% of valid frequency or radio communications tests conducted in accordance with this Article result in reliable and intelligible two-way communications between the appropriate dispatch center and the individual testing frequency or radio communications at the following particular locations within a building or structure:

- i) Throughout vertical exit enclosures, including fire stairs and horizontal exit passageways;
- ii) In Fire Command Centers, if provided;
- iii) In Police Station or Substation facilities, if provided.

d) FCC Authorization: If amplification is used in connection with a system required to be installed in a building or structure pursuant to this Article, then the building owner shall obtain all necessary FCC authorizations and/or permits therefor, and a copy of all such FCC authorizations or permits shall be provided to the City prior to use of the system.

**Section 9-36-40. Enhanced Amplification Systems.**

a) When buildings or structures are required by this Article to provide additional facilities, communications systems, or related appurtenances in order to achieve the adequate signal strength required by this Article, such buildings or structures may be equipped with any of the following systems or combination thereof, in order to achieve the required adequate radio coverage: radiating cable systems; internal multiple antenna systems with an acceptable frequency range as established by the testing standards and procedures in this Article; any amplification systems as needed; voting receiver systems; or any other similar system approved by the City, such as will result in the production of adequate signal strength.

b) If any part of the installed system contains a hard-wired electrically powered component, the system shall also contain an independent redundant power source, and shall be capable of operation on a battery and/or generator system for a period of at least four hours without external power input or maintenance. The

independent battery system shall automatically charge itself during normal operations.

**Section 9-36-50. Testing Procedures – Standards and Guidelines.**

**(A) Measurements and tests shall be performed using the following standards and guidelines:**

- 1) Each measurement or test required by this Article shall be performed from inside the building or structure, using a portable radio device such as is generally used by emergency service providers operating within the City, which providers minimally include the Police Department and the Fire Department. Any digital, non-simplex channel that is programmed into such radio device may be used during testing; the same channel may, but need not be, used for all tests.
- 2) Portable radios used in testing shall be fully charged and shall not be displaying “low battery” indications.
- 3) During radio transmissions associated with testing, the portable radio shall be held approximately two (2) inches from the mouth of the tester, at approximately a 45-degree angle with the tester’s face, with the built-in microphone and speaker directed towards the tester’s mouth, and with the antenna in a vertical orientation above the radio. The antenna of each radio shall be mounted directly on the top of the radio body/case. The built-in microphone shall be used for all testing; shoulder or other attached microphones/headsets may be used, but shall not be required, for such testing.
- 4) The tester shall orient himself or herself so as to be facing towards the exterior wall of the building nearest to the point of the test.
- 5) Both initial and annual tests shall be conducted by persons regularly employed by the emergency-service-provider(s), who are trained and experienced in the use of all radio devices, testing equipment and emergency communication protocols. At least one tester from the Police Department and one tester from the Fire Department shall conduct initial and annual tests, unless alternate arrangements are approved by both providers; provided that all tests shall be conducted either by the Police Department, Fire Department, or both.
- 6) Each tester shall be responsible for determining whether or not radio transmissions received in the building or structure are reliable and intelligible; the dispatcher at the emergency-agency dispatch center shall be responsible for determining whether or not radio transmissions received in the dispatch center are reliable and intelligible. An unintelligible, broken or intermittent message transmission constitutes a failure of the test at the specific location being tested.
- 7) The individual tester in the building or structure shall initiate each test by attempting to transmit a message from within the building or

structure to the dispatch center. Failure to receive a prompt response from the dispatch center after normal transmission of a message constitutes a failure of the test at the specific location being tested.

- 8) The tester in the building or structure shall exercise professional judgment and reasonable discretion in the conduct of all tests. If the tester reasonably believes that a particular test is not valid or reliable (e.g., is flawed by human error), then the results of that test may be discarded, and the test shall be repeated according to the standards and procedures of this Article and established protocols of emergency communication.

**B) Initial Tests:** Initial tests shall be conducted prior to the issuance of a Certificate of Occupancy in the case of a new or newly remodeled building or structure; and in the case of existing buildings or structures that are subject to this Article, within a commercially reasonable time not to exceed ninety (90) from the effective date of this Article.

- 1) Each floor of the building or structure shall be divided into 100 foot square grids, and testing shall be performed at the center of each grid. The 100 foot grids shall then be divided into 25 foot square grids, and testing shall again be performed at the center of each 25 foot grid, such that five (5) tests are completed for every 100 foot grid square. At least one additional test shall be conducted at the center of every room in the building or structure, and in the areas specifically identified in Section 9-36-30(c)(2). The size or number of the grids, tests, or testing areas may be further refined upon the recommendation of any tester, in areas, for example, where displays, equipment, inventory, or any other material or obstruction may significantly affect communications or adversely attenuate or interfere with radio signals.
- 2) Tests shall also be performed on every staircase landing within all vertical exit enclosures.

**C) Annual Tests:**

- 1) Tests shall be conducted annually by either the Fire Department or the Police Department, or both, according to the provisions of Section 9-36-50 and this Article. If during subsequent annual tests communications performance appears to have measurably degraded in comparison with previous test results, or if valid testing otherwise fails to demonstrate adequate system performance, then the owner of the building or structure shall remedy the problem and within a commercially reasonable time not to exceed thirty (30) days shall repair, restore or replace the system and have it re-tested and approved in a manner consistent with this Article.

- 2) If such degradation of the system is due to intervening additions or remodeling of the building or structure such as require a Building Permit, then prior to receiving a Certificate of Occupancy the owner of the building or structure shall remedy the problem and restore the system in a manner consistent with the original approval criteria of this Article, in order to receive such Certificate of Occupancy.
- 3) Any system degradation or failure not related to the performance of the owner's existing on-site system shall be the responsibility of the appropriate emergency service provider(s).

### **Section 9-36-60. Additional Performance Requirements.**

#### **Performance Requirements – Inbound and Outbound Transmissions:**

1) All systems, buildings and structures subject to the provisions of this Article shall maintain a minimum average in-building field transmission strength of 3.9uV (-95 dBm), throughout 95% of the area of each floor of the building or structure, for all inbound and outbound signals transmitted to or from the appropriate emergency service radio dispatch system(s) providing coverage for the building or structure. If such -95 dBm signal does not meet the requirements of subparagraph 2 below, then the noise floor for the building or structure must be determined, and an acceptable signal strength must be established that is at least 15 dBm above the noise floor determined level. Such signal shall otherwise meet the requirements of the then current version of TSB88A standards.

2) As used in this Section 9-36-60, 95% coverage or reliability means the radio device shall receive and transmit 100% of the time at the field strength and levels defined in this Article within 95% of the building's area.

3) If the field strength outside the building or structure, in the area where the receiving antenna system for the in-building system is located, is less than the -95 dBm standard, then the minimum required in-building field strength shall equal the field strength in the area of the receiving antenna for the building or structure.

4) All essential system components shall be installed and maintained in a climate-controlled room in the building or structure, that is readily accessible for proper repair and testing, and such room shall be separated from the remainder of the building or structure by fire barriers having not less than a two (2) hour fire resistance rating. Such room shall otherwise be constructed in accordance with all applicable Building and Fire Codes. All essential system circuits shall be capable of being monitored on a supervisory circuit, and such supervisory circuit shall be located on a fire alarm panel sufficient to display emergency power availability and operational readiness of the system. Such panels, circuits and displays shall be constructed and maintained in accordance with all applicable Building, Fire, Electrical, and Fire Prevention Codes, and pursuant to the then current R56 grounding standards.

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**CITY OF BRIGHTON, COLORADO**

By: \_\_\_\_\_  
**Janice E. Pawlowski, Mayor**

**ATTEST:**

\_\_\_\_\_  
**Karen Borkowski, City Clerk**

**APPROVED AS TO FORM:**

\_\_\_\_\_  
**Margaret R. Brubaker, City Attorney**

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**CITY OF BRIGHTON, COLORADO**

By: \_\_\_\_\_  
**Janice E. Pawlowski, Mayor**

**ATTEST:**

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**Karen Borkowski, City Clerk**

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