

**ARTICLE XXVII.  
PERFORMANCE STANDARDS**

In any district no land shall be used in any manner other than in compliance with the performance standards set forth herein.

**SECTION A. FIRE AND EXPLOSIVE HAZARD.**

The storage and use of all flammable or combustible liquids and hazardous materials shall be permitted only in accordance with Article V of this ordinance, and only when such storage or use conforms to the standards and regulations of the City of Carrollton.

**SECTION B. GLARE.**

The purpose of this section is to minimize glare, sky glow, light trespass and excessive energy consumption to attain effective outdoor lighting through the use of appropriate lighting fixtures, practices and systems, while maintaining safety, security and productivity.

1. Light fixtures shall be hooded or a lighting source with a seal of approval for dark sky compliance or its equivalent as determined by the City Manager or designee shall be installed.
2. Light fixtures of any kind shall be oriented 90 degrees downward from any arterial street, as shown on the adopted Transportation Plan.
3. Adjustable wall-mounted fixtures shall be mounted with shielding placed such that light is projected downwards with spillage no greater than 45 degrees from the face of the building.
4. Light and Glare Standards:
  - a. There shall be no more than two-tenths (0.2) of one foot candle of light vertically measured five feet above grade or more at the property line shining onto any adjacent residential uses or zoned property, and, more than four-tenths (0.4) of one foot candle of light vertically measured five feet above grade or more.
  - b. The use of mercury vapor lamps as a light source shall be prohibited.
  - c. All luminaires on property zoned or used for commercial or multi-family residential purposes visible from any street shall be so designed as to have the light source fully shielded from direct view at a point five feet or greater above grade at the property line.
  - d. All luminaires on property zoned or used for commercial or multi-family residential abutting property used or zoned Single-Family Residential District shall be so designed as to have the light source fully shielded from direct view five feet or greater above grade at the property line.

*ART. XXVII PERFORMANCE STANDARDS*

5. The following shall be exempted from this Section:
  - a. Lighting installed by a governmental agency for public benefit on public right-of-ways, parks and public recreations areas.
  - b. Emergency lighting by police, fire and or municipal, state or federal governmental authorities.
  - c. All approved public and private school ball fields. Lighting for these outdoor recreational uses shall be shielded to comply with the limitations on neighborhood properties.
  - d. Outdoor advertising signs constructed of translucent or other materials and wholly illuminated from within do not require such shielding.
  - e. Temporary lighting as approved for special events.
  - f. Low wattage lighting used for seasonal or decorative purposes in outside areas.
6. Any addition, replacement, or substantial change to an existing lighting system shall comply with the provisions of this article. (*Ord. No. 3467, 12/06/11*); (*Ord. 3769, 10/18/16*)

**SECTION C. NOISE.**

At no point at the bounding property line of any lot or parcel shall the sound pressure level of any operation or activity exceed the decibel limits specified in the octave band groups designated in the following table:

1. Maximum permissible daytime octave band-decibel limits at the bounding property line in any district:

<b>Octave Band (cps)</b>	<b>Decibel Band Limit (dB re 0.0002 microbar)</b>
37 - 75	86
75 - 150	76
150 - 300	70
300 - 600	65
600 - 1200	63
1200 - 2400	58
2400 - 4800	55
4800 - 9600	53
A scale	65

*Note: "A scale" levels are provided for monitoring purposes only and are not applicable to detailed sound analysis.*

*ART. XXVII PERFORMANCE STANDARDS*

2. The following corrections shall be made to the table of octave band-decibel limits in determining compliance with the noise level standards in any district:
  - a. When noise is present at nighttime; SUBTRACT 7 dB.
  - b. When noise contains strong pure-tone components or is impulsive, that is, when meter changes at 10 decibels or more per second; SUBTRACT 7 dB.
  - c. When noise is present for not more than:
    - ½ minute in any ½-hour period; or
    - 1 minute in any 1-hour period; or
    - 10 minutes in any 2-hour period; or
    - 20 minutes in any 4-hour period;ADD 10 dB.
3. Measurement of noise shall be made with a sound level meter or octave band analyzer meeting the standards prescribed by the American Standards Association.

**SECTION D. ODOROUS MATTER.**

No use shall be located or operated in any district which involves the emission of obnoxious odorous matter from a source of operation where such obnoxious odorous matter exceeds the odor threshold at the bounding property line or any point beyond the tract upon which such use or operation is located.

The odor threshold as set forth herein shall be determined by observation by a person or persons. In any case where uncertainty may arise or where the operator or owner of an odor-emitting use may disagree with the enforcing officer, or where specific measurement of odor concentration is required, the method and procedures specified by the American Society for Testing Materials, A.S.T.M. D1391-57 entitled "Standard Method for Measurement of Odor in Atmosphere", shall be used and shall be hereby incorporated into this ordinance by reference.

**SECTION E. SMOKE AND PARTICULATE MATTER.**

1. SMOKE:

The standards specified by the Texas Air Control Board Regulations for the Control of Air Pollution, as published by the Texas State Department of Health, shall apply.

2. PARTICULATE MATTER:

The standards specified by the Texas Air Control Board Regulations for the Control of Air Pollution, as published by the Texas State Department of Health, shall apply.

*ART. XXVII PERFORMANCE STANDARDS*

**SECTION F. TOXIC AND NOXIOUS MATTER.**

No operation or use permitted in any district shall emit a concentration, across the bounding property line of the tract on which such operation or use is located, of toxic or noxious matter which will exceed 10 percent of the concentration (exposure) considered as the threshold limit for an industrial worker as such standards are set forth by the Texas State Department of Health in Threshold Limit Values Occupational Health Regulation No. 3, which is hereby incorporated into this ordinance by reference.

**SECTION G. VIBRATION.**

No operation or use in any district shall at any time create earthborn vibration which, when measured at the bounding property line of the source of operation, exceeds the limits of displacement set forth in the following table in the frequency ranges specified:

<b>Frequency Cycles per Second</b>	<b>Displacement in Inches</b>
0 to 10	0.0010
10 to 20	0.0008
20 to 30	0.0005
30 to 40	0.0004
40 and over	0.0003

**SECTION H. TRAILERS AND CONTAINERS.**

No trailers, containers, shipping containers, commercial boxes, vehicles or similar structures shall be used as buildings or structures.

**SECTION I. DEFINITIONS APPLICABLE TO THE PERFORMANCE STANDARDS.**

*(Ord. No. 3467, 12/06/11)*

1. **BOUNDING PROPERTY LINE:** The far side of any street, alley, stream or other permanently dedicated open space from the light or noise source when such open space exists between the property line of the light or noise source and adjacent property. When no such open space exists, the common line between two parcels of property shall be interpreted as the bounding property line.
2. **DAYTIME:** The hours between sunrise and sunset on any given day.
3. **DECIBEL:** A unit of measurement of sound pressure.
4. **FREQUENCY:** The number of times per second a vibration or sound wave oscillates.

*ART. XXVII PERFORMANCE STANDARDS*

5. **GLARE:** Direct lighting emitted from a luminaire that causes reduced vision or temporary blindness.
6. **LIGHT SOURCE:** The bulb or lamp, which is a component of the luminaire.
7. **LUMINAIRE:** A device or fixture containing a light source and means for directing and controlling the distribution of light from a source. A luminaire consists of the complete lighting assembly, less the support assembly.
8. **MERCURY LAMP:** A high intensity discharge lamp where light is produced by radiation from mercury vapor.
9. **OCTAVE BAND:** A portion of the audible sound spectrum. An Octave Band analyzer divides the audible sound spectrum into eight Octave Bands.
10. **ODOR THRESHOLD:** The concentration of odorous matter in the atmosphere necessary to be perceptible to the olfactory nerve of a normal person. Determination of the Odor Threshold is prescribed by A.S.T.M. D1391-57, "Standard Method of Measuring Odor in Atmospheres".
11. **PARTICULATE MATTER:** Finely divided solid or liquid matter, other than water, which is released into the atmosphere.
12. **SHIELDING:** The use of a physical structure intended to restrict emitted light.
13. **SMOKE:** The visible discharge of particulate matter from a chimney, vent or combustion process.
14. **TOXIC AND NOXIOUS MATTER:** Any solid, liquid or gaseous matter which is present in sufficient quantities to endanger the health, safety and comfort of persons in the vicinity or which may cause injury or damage to property.
15. **VIBRATION:** A periodic displacement of the earth measured in inches.

**SECTION J. OUTDOOR RECEPTACLES.**

Receptacles shall be located and maintained in accordance with the following provisions:

1. Receptacles 50 gallons (6.7 cubic feet) to less than 100 gallons (15.5 cubic feet) in volume:
  - a. Shall be inside a building, flush against the exterior wall of a building, or within 10 feet of the building.
  - b. Are prohibited in parking areas, on driveways, or landscape areas, with the exception that containers under 50 gallons may be placed next to shopping carts corrals without encroaching upon or impacting existing parking spaces.
  - c. A minimum four feet of clearance shall be maintained on any sidewalk or walkway to allow safe pedestrian access.
  - d. The regulations in this subsection exclude waste and recycling bins on single family lots or in the Transit Center District, as approved on a development plan, as provided in Article XX.
2. Receptacles 100 gallons (15.5 cubic feet) or greater:
  - a. Shall be located behind the main building on the lot or parcel, or shall be completely

*ART. XXVII PERFORMANCE STANDARDS*

screened as prescribed in Article XXV, Section C.

- b. Shall be marked to identify the name and telephone number of the firm(s) or person(s) responsible for the removal of collected materials, and shall display a notice stating that no material shall be left outside of the collection bin or container.
- c. Shall occupy or be located on a paved surface only, as specified in the City of Carrollton General Design Standards, as amended, and upon a developed property.
- d. Are prohibited on properties that contain single-family land uses.
- e. Shall be located no closer to the street right-of-way than any building.
- f. Shall not be located directly beneath any overhead utility line less than 25 feet in height.
- g. Receptacles 100 gallons or greater are exempted from the provisions of this subsection so long as a unique site and permanent condition exists on the property that precludes the use of other alternatives for trash removal, if such receptacles have been in continued use since a date prior to July 10, 2018 as the method of regular trash removal service for a business located onsite.
- h. Roll off dumpsters used for debris related to construction, demolition, or remodel projects shall be exempt from the provisions of this section, for the duration of an active building permit.

3. SPECIAL PROVISIONS:

- a. All driveways or other areas bearing receptacles 100 gallons (15.5 cubic feet) or greater shall be designed to accommodate the weight of a 56,000 pound G.V.W. sanitation truck. Lifting pads shall be provided in front of each trash dumpster receptacle location to accommodate the front wheels of the sanitation service trucks.
- b. All refuse items collected and stored must be completely contained within the receptacle. In no instance shall the collected or stored material be stacked to exceed the height of the waste container. No material shall be stored or displayed outside of the receptacle. The receptacle shall be equipped with a lid that completely covers any opening utilized for the deposit of items or material, and shall remain closed at all times, except during the deposit or removal of contents.
- c. Receptacles shall be positioned at a 45 degree angle adjacent to a driving aisle or placed in a manner that allows a truck to have straight access.

- 4. For all other outdoor receptacle requirements, refer to Article XXV, Section (C)(5).

**SECTION K. VENDING AND REVERSE VENDING MACHINES.**

*(Ord. No. 3439, 05/03/11)*

All vending and reverse vending machines shall comply with the following conditions:

- 1. Vending machines are subordinate structures that are classified as outside display. The area occupied by a vending machine shall be included in calculating coverage for outside display, as described in Article XXVI, Section B.

*ART. XXVII PERFORMANCE STANDARDS*

2. A reverse vending machine is prohibited outside.
3. A vending machine shall have a maximum height of 10 feet and maximum area of 24 square feet.
4. A vending machine shall be placed flush against the outside wall of a building.
5. A vending machine shall not be located within a required setback, open space, view corridor, landscaping area, or within a parking lot, or driveway aisle.
6. A vending machine shall be located to allow a minimum four feet of clearance to allow safe pedestrian access.
7. Vending machines shall be maintained in a clean litter-free condition, and shall be sufficiently illuminated to ensure safe operation at all times.
8. Vending machines located in public parks are not required to meet the requirements above, except Section K(7), but shall be screened from streets.

**SECTION L. WATER WELL POLLUTION PROTECTION.** (*Ord. No. 3438, 05/03/11*)

1. PURPOSE:

- a. This Section sets forth uniform requirements for the users and the construction of facilities in or on land within 150 feet of any water wells operated by the City of Carrollton (“Wells”) in order to promote sanitary conditions in and around such Wells, to secure all such land from pollution hazards, and to enable the City to comply with all applicable state and local regulations.
- b. The objective of this Section is to prevent certain uses and the construction of facilities in or on land surrounding the Wells, which might create a danger of pollution to the water produced from such Wells.

2. DEFINITIONS:

Unless the context requires otherwise, the following terms and phrases, as used in this Section, shall have the meanings hereinafter designated:

- a. *Person* shall mean any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or any other legal entity, or its legal representatives, agents, successors, or assigns.
- b. *Wells* shall mean the water wells owned and operated by the City.

*ART. XXVII PERFORMANCE STANDARDS*

3. PROHIBITED ACTIVITIES:

The following activities are prohibited within the designated areas of land surrounding the Wells:

- a. Construction and/or operation of any underground petroleum and/or chemical storage tank, liquid transmission pipeline, stock pen, feedlot, dump grounds, privy, cesspool, septic tank, sewage treatment plant, sewage wet well, sewage pumping station, drainage ditch which contains industrial waste discharges or the wastes from sewage treatment systems, solid waste disposal site, land on which sewage plant or septic tank sludge is applied, land irrigated by sewage plant effluent, septic tank perforated drain field, absorption bed, evapotranspiration bed, area irrigated by low dosage, low angle spray on-site sewage facility, military facility, industrial facility, wood treatment facility, liquid petroleum and petrochemical production, storage, and/or transmission facility, Class 1, 2, 3, and/or 4 injection well, pesticide storage and/or mixing facility, abandoned well, inoperative well, improperly constructed water well of any depth, and all other construction or operation that could create an unsanitary condition is prohibited within, upon, or across all areas of land within a 150 foot radius of the Wells. For the purposes of this Section, “improperly constructed water Wells” are those Wells that do not meet the surface and subsurface construction standards for a public water supply well.
- b. Construction and/or operation of tile or concrete sanitary sewers, sewer appurtenances, septic tanks, storm sewers, and cemeteries is specifically prohibited within, upon, or across any area of land within a 50 foot radius of the Wells.
- c. Construction of homes or buildings upon any area of land within a 150 foot radius of the Wells is permitted, provided the restrictions described in items A and B above are met.
- d. Normal farming and ranching operations are not prohibited by this Section; provided, however, livestock shall not be allowed within a 50 foot radius of the Wells.

4. RIGHT OF ENTRY:

City employees, or authorized representatives of the City, bearing proper credentials and identification, shall be permitted to immediately enter upon any premises located within a 150 foot radius of any Well to conduct any inspection or observation necessary to enforce this Ordinance.

5. REQUIRED REMOVAL:

Any person who shall violate any provision of this section shall be required to remove the prohibited construction or potential source of contamination within 30 days after notification that they are in violation of this Section.



*ART. XXVII PERFORMANCE STANDARDS*

**SECTION M. ROOF-TOP SCREENING.**

Roof-mounted equipment shall include, but not be limited to, storage tanks, compressor units, mechanical equipment and elevator machinery, and shall be integrated into the building design and screened on all sides of the building. Roof-top screening shall be provided in a manner such that the screening is equal in height to the highest point of any roof-mounted equipment. Roof-top screening shall use building materials similar in appearance to the façade of the building on which such items are located in order to create a smooth, clean, integrated appearance. Existing buildings which will have new roof-mounted equipment installed shall not require roof-top screening where new equipment is similar in size, shape, color and location to existing roof-mounted equipment.

**SECTION N. RENEWABLE ENERGY SYSTEMS (SOLAR ENERGY, WIND TURBINES AND RAINWATER HARVESTING)** (*Ord. No. 3576, 09/17/13*); (*Ord. No. 3653, 12/09/14*)

1. SOLAR ENERGY: Both building-mounted and ground-mounted solar energy systems shall be allowed in accordance with the following requirements:
  - a. Location:
    - i. Solar energy systems shall be located on the roof of a dwelling unit or principal building, detached garage, dwelling or similarly constructed building; or
    - ii. Solar energy systems shall be ground-mounted.
  - b. Height: Ground-mounted solar energy systems shall not exceed 15 feet in height. Roof-mounted solar energy systems are subject to the maximum height limits of the zoning district in which they are located. On pitched roofs, solar energy systems shall be mounted flush with the existing slope of the roof system. On flat roofs, solar energy systems shall be subject to the roof-top screening requirements in Section M.
  - c. Setback and screening: Ground-mounted solar energy systems shall meet all applicable building setback and screening provisions for dwelling units or main structures of the zoning district.
  - d. Roof-mounted panels/modules:
    - i. Panel/modules shall not be located on an architectural elevation that faces a street.
    - ii. For lots adjacent to arterial streets as designated by the adopted Transportation Plan, such panels/modules shall not be located on an architectural elevation that faces said street unless otherwise authorized with a Special Exception granted under Article XXXII, Section E.3.b.3.K. See Exhibit 4.2 in Appendix A.
    - ii. Panels shall meet the Fire Code as adopted by the City of Carrollton.
  - e. All solar energy systems shall be in compliance with the International Green Construction Code (IGCC) or the ICC 700 National Green Building Standard.
2. WIND ENERGY SYSTEMS (WIND TURBINES): Wind energy systems shall be allowed as accessory structures, in accordance with the requirements of this section:

*ART. XXVII PERFORMANCE STANDARDS*

- a. Location: Wind Turbines shall be detached as an accessory structure and not supported by a building.
- b. Setback and Height: The minimum setback for wind energy systems shall be not less than the total height of the system. In addition, a wind energy system shall not be located in the front yard. The maximum height limit is 36 feet.
- c. Diameter of Wind Turbine Rotor Blades: In residential districts, the maximum diameter of the wind turbine rotor blades (swept area of blades) shall be 15 feet.
- d. Automatic Over-Speed Controls: All wind energy systems shall be equipped with automatic over-speed controls to limit the blade rotation speed to within the design limits of the wind energy system.
- e. Secondary Uses: (e.g., radio and television receiving antennas, satellite dishes), commercial markings, messages, signs and banners shall be prohibited on wind energy systems except for warning signage.
- f. Tower Design: All wind turbine systems shall be designed and installed with a monopole design. Wind Turbines shall be certified or approved by the U.S. Dept. of Energy and the American Wind Energy Association ([awea.org](http://awea.org)).
- g. Restricting Access or Fencing: Access control to the wind energy system shall be provided by removing climbing steps within 12 feet of the ground elevation, by sheathing, or equivalent measure. A minimum six foot high fence with a locking portal shall be required around any tower that, by design, could present a potential climbing hazard. All disconnect switches and junction boxes at the bottom of the tower shall be secured to prevent unauthorized access. They shall also be labeled with HIGH VOLTAGE signage.
- h. Noise and Vibrations: Refer to Article XXVII in the Comprehensive Zoning Ordinance.
- i. Appearance, Color and Finish: The wind generator and tower shall be maintained and finished with a neutral, non-reflective paint color that blends into the surroundings (such as is typically supplied by the manufacturer).
- j. Electro-Magnetic Interference: The system shall be operated so that no disruptive electro-magnetic interference is caused to off-site telecommunications, surveillance or other similar systems or equipment. If it has been demonstrated that the system is causing such interference, the system owner shall promptly eliminate such interference or cease operation of the system.
- k. Lighting: Permanent artificial lighting shall not be permitted on wind energy systems unless required by the FAA.
- l. Abandonment: A wind energy system that is out of service for a continuous 180 days will be deemed to have been abandoned. The Building Official may issue a Notice of Abandonment to the owner of a wind energy system that is deemed to have been abandoned. The owner shall have the right to respond to the Notice of Abandonment within 30 days from Notice receipt date. The Building Official shall withdraw the Notice of Abandonment and notify the owner that the Notice has been withdrawn if the owner provides information that demonstrates the wind energy system has not been abandoned. If the wind energy system is determined to be abandoned, the owner of the system shall remove it at the Owner's sole expense within 60 days of receipt of Notice of Abandonment.

*ART. XXVII PERFORMANCE STANDARDS*

- m. All wind energy systems shall be in compliance with the International Green Construction Code (IGCC) or the ICC 700 National Green Building Standard.
3. RAINWATER HARVESTING SYSTEMS: Rainwater harvesting systems shall be allowed as accessory structures, in accordance with the requirements of this section:
- a. Accessory Structures: Rainwater harvesting barrels, tanks and cisterns shall be considered accessory structures, except that they shall not be required to meet the exterior wall standards of accessory structures, and they shall not be counted toward the square footage allotment of accessory structures.
  - b. Setbacks: No above ground portion of rainwater harvesting systems shall be placed closer to a right-of-way than the building front façade.
  - c. Screening: A rainwater harvesting system shall either be fully screened from view from any street or public right-of-way, placed under ground or shall be integrated into the design of the structure as a compatible architectural element of the structure. To be a compatible architectural element, a rainwater harvest system shall utilize consistent or compatible exterior materials and design elements of the primary structure.
  - d. A permit shall be required for all rainwater harvesting systems that contain either of the following:
    - i. An interconnected catchment system with total collection volume of over 100 gallons in aggregate throughout the system
    - ii. Any individual rain barrel, vessel, catchment basin or cistern with a volume of over 100 gallons
  - e. Permits are not required when:
    - i. Each individual rain barrel or vessel is less than 100 gallons in volume
    - ii. Each downspout is connected directly to an individual rain barrel or vessel with no inter-connectivity between storage components
  - f. All requirements related to location on the property and appropriate screening will still apply, whether a permit is required or not.
  - g. Equipment shall be properly maintained to ensure health and safety, including – but not limited to – the regular flushing of debris from the bottom of storage containers and keeping insects and animals out of containers and distribution pipe systems.
  - h. The system shall not be connected into the domestic or municipal water or sewer system.
  - i. All rainwater harvesting systems shall be in compliance with the International Green Construction Code (IGCC) and the ICC 700 National Green Building Standard.

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