ORDINANCE NO. 11-009


WHEREAS, City Staff has researched exterior lighting regulations as a result of light spill-over onto adjacent roadways and properties which can become a public nuisance by distracting drivers because of the glare on adjacent roadways and residential properties; and

WHEREAS, the Planning and Zoning Commission, at their January 10, 2011, meeting, unanimously recommended the City Council consider the approval of lighting standards;

WHEREAS, the City Council believes the amendments to Chapter 28 of the City of Greenville Code of Ordinances, Article V – Site Development Standards concerning the regulation of exterior lighting is consistent with the best interest of the citizens of Greenville;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GREENVILLE, TEXAS, THAT:

SECTION 1: The City Council hereby approves the following amendments to Chapter 28 of the City of Greenville Code of Ordinances, Article V – Site Development Standards, concerning the regulation of exterior lighting:

5-9 EXTERIOR LIGHTING

5-9.1 Purpose. The City of Greenville desires to enhance the beauty of the area for its citizens, both during the day and at night. This includes the restriction of light trespass, light pollution and glare so that safety and security will not be jeopardized and night vision will be enhanced.

5-9.2 Definitions.

1: AVERAGE TO MINIMUM: The ratio of average foot-candles to the minimum foot-candle point calculation or reading for a given area. This ratio is an indicator of lighting uniformity. The lower the ratio the better the uniformity.

2: CUTTOFF: A luminaire light distribution where the candela per 1,000 lamp lumens does not numerically exceed 25 (2.5%) at a vertical angle of 90 degrees
above nadir and 100 (10%) at a vertical angle of 80 degrees above nadir. This applies to all lateral angles around the luminaire.

3: EXTERIOR LIGHTING: The nighttime illumination of an outside area or object by any man-made device located outdoors that produces light by any means.

4: FIXTURE: The assembly that houses the lamp or lamps and can include all or some of the following parts: housing, mounting bracket or pole, socket, lamp holder, ballast, reflector or mirror, and/or refractor or lens.

5: FLOOD OR SPOTLIGHT: Any light fixture or lamp that incorporates a reflector or a refractor to concentrate the light output into a directed beam in a particular direction with a wide or narrow beam.

6: FOOT-CANDLE(S): The amount of light falling on a surface (measured or calculated). It can be quantified as one lumen per square foot. For an approximate conversion from lux to foot-candies, divide by ten. The exact conversion is 10.76 lux equals one foot-candle.

7: FOOT-CANDLES, AVERAGE: The average of a number of points of foot-candle calculations or foot-candle readings in a given area.

8: FOOT-CANDLES, INITIAL: Foot-candles that are calculated with no adjustment for dirt buildup in the fixture or lamp lumen depreciation. Initial foot-candles should be measured when a lighting system is new and after 100 hours of lamp burn-in time.

9: FOOT-CANDLES, MINIMUM: The minimum foot-candle point calculation or reading in a given area.

10: FULL CUTOFF: A luminaire light distribution where zero candela intensity occurs at an angle of 90 degrees above nadir, and at all greater angles from nadir. Additionally, the candela per 1,000 lamp lumens does not numerically exceed 100 (10%) at a vertical angle of 80 degrees above nadir. This applies to all lateral angles around the luminaire.

11: LAMP: The component of a luminaire that produces the actual light.

12: LIGHT TRESPASS: The shining of light produced by a luminaire beyond the boundaries of the property on which it is generally located and intended.

13: LUMINAIRE: This is a complete lighting system, and includes a lamp or lamps and a fixture housing, reflector(s), refractor, etc.

14: LUMINANCE: What we commonly call brightness or the light coming from a surface. Luminance is composed of the intensity of light striking an object or surface and the amount of that light reflected back toward the eye. All surfaces have some reflecting qualities and therefore have luminance, light surfaces being more reflective than dark surfaces. The luminance of asphalt pavement and the moon can both be measured.

15: MOUNTING HEIGHT OF LUMINAIRE: The mounting height of a luminaire shall be the vertical distance from the ground directly below the centerline of the luminaire to the center of the light source (lamp) in the luminaire.
16: NON-CUTOFF: A luminaire light distribution where there is no candela limitation in the zone above maximum candela.

17: NONCONFORMING LUMINARIES: Luminaries not conforming to this Section that were in place at the time this Section was voted into effect.

18: TEMPORARY EXTERIOR LIGHTING: The nighttime illumination of an outside area or object by any man-made device located outdoors that produces light by any means for a limited period of time. This period can be specified by the Town.

19: UNIFORMITY: A description of the smoothness of the lighting pattern or the degree of intensity of light and dark areas in the roadway or area to be lighted. Uniformity is usually expressed as a ratio such as max to min or average to min. The lower the ratio the more uniform the lighting design.

5-9.3 Applicability. This Section shall apply to all new, expanded, or redeveloped multi-family, townhouse, single-family attached and non-residential construction where exterior lighting is existing or proposed.

5-9.4 Exemptions. The following are exempt from the standards of this Section:

(A) An expansion of existing building square footage or parking area that does not exceed fifty percent (50%). For example, an existing 2,000 square foot building may expand up to an additional 1,000 square feet without meeting the requirements of this Section.

(B) Decorative lighting used for holidays, special events, parties, etc… Said lighting must be removed within a reasonable time following the holiday, special event, or party. The Building Official shall determine what the “reasonable time” should be.

(C) Luminous tube lighting.

(D) Hazard warning luminaries required by federal and state regulatory agencies.

(E) Temporary emergency lighting by police, fire, or other emergency services, as well as vehicular luminaries.

(F) Single-family and two-family dwellings, provided that lighting shall not shine directly onto any dwelling beyond the property line.

(G) City Council may vary from these requirements as part of the approval of public street or sidewalk projects.

5-9.5 Lighting Plan Required. Lighting plans should be developed in conjunction with landscape plans, and coordinated so that potential conflicts between utility lines
and plant materials are avoided, light is not blocked by tree canopies, and existing vegetation is protected. Any non-exempt development that proposes exterior lighting shall submit a detailed lighting plan as part of site plan approval. The Community Development Director may elect to waive this requirement for small independent projects if the fixture types are specified on the plan and comply with the requirements of this Section. A lighting plan shall include:

(A) Graphic representations and written description of each type of illuminating device, fixture, lamp, pole, support, reflector, and other devices. This may include, but is not limited to, catalog cuts by manufacturers and/or specification drawings.

(B) An isofoot-candle plan that shows typical foot-candle contours or a point photometric grid that indicates foot-candle levels measured at grade across the site and adjacent areas just beyond the property line to indicate the amount of light trespass.

(C) Photometric summary table showing initial foot-candles (maximum, average, and minimum), uniformity ratio (Average:Minimum), and light loss/depreciation factors. Foot-candle levels must be shown at initial levels.

(D) In the event that the applicant’s initial submittal does not clearly demonstrate compliance with this Section, additional information and/or a compliance certification stamped by a certified testing laboratory or professional engineer may be requested by the Community Development Department.

(E) An as-built/installed lighting certification, stamped by a certified testing laboratory or professional engineer, stating that all site lighting is installed according to an approved site plan shall be required prior to the issuance of a Certificate of Occupancy.

(F) Any changes to an approved lighting plan must be approved by the Director of Community Development through a site plan revision.

5-9.6 Illumination Standards. All site lighting shall not exceed the intensities and uniformity ratios in the tables below, unless otherwise specified herein. Where there is a question as to the use or illumination standard, the Illumination Engineering Society of America (IESNA) Lighting Handbook, as amended, shall serve as a guide for providing adequate and safe illumination levels.

<table>
<thead>
<tr>
<th>Use</th>
<th>Horizontal Illuminance Average</th>
<th>Uniformity Ratio (Average:Minimum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-Family Residential</td>
<td>4.0</td>
<td>4:1</td>
</tr>
</tbody>
</table>
- Retail and Commercial
  - Office
  - Industrial
  - Institutional
  - Cultural, Civic, and Recreational
  - Place of Worship
  - Attached Residential

<table>
<thead>
<tr>
<th>Location</th>
<th>Horizontal Illuminance Average</th>
<th>Uniformity Ratio (Average:Minimum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vital Locations*</td>
<td>5.0</td>
<td>4:1</td>
</tr>
<tr>
<td>Sidewalks</td>
<td>1.0</td>
<td>4:1</td>
</tr>
<tr>
<td>Vehicular Use Area (non-parking)</td>
<td>1.0</td>
<td>4:1</td>
</tr>
<tr>
<td>Storage Yards</td>
<td>4.0</td>
<td>4:1</td>
</tr>
<tr>
<td>Loading/Unloading Areas</td>
<td>15.0</td>
<td>4:1</td>
</tr>
<tr>
<td>Outdoor Sales/Display Areas</td>
<td>10.0</td>
<td>4:1</td>
</tr>
<tr>
<td>General Recreation Areas (ball fields, playgrounds, pools)</td>
<td>10.0</td>
<td>4:1</td>
</tr>
</tbody>
</table>

*Includes entry/exit doors, service areas, ATM’s, etc... and based on an area 10’ x 10’ or the limits of the specific area

**5-9.7 Design Standards.** All outdoor lighting shall conform to the standards and provisions listed below:

(A) **Mounting Heights.** Outdoor lighting shall be designed, located and mounted at heights no greater than eighteen (18) feet above grade for non-cutoff lights and building mounted lights; thirty (30) feet above grade for full cutoff lights.

(B) **Luminaire Standards.** The City of Greenville approves the use of the following luminaries and lamps:

(1) **Luminaries:** Shielded flood, cobra head full cutoff, decorative post lights (non-cutoff, cutoff, and full cutoff), fully-shielded walkway bollards, shoebox, shielded goose-neck fixtures and cutoff wall packs. Other luminaries may be approved by the Community Development Director if they demonstrate unique architectural design while maintaining performance standards of approved luminaries.
(2) **Lamps:** Metal halide and high pressure sodium (HPS) only. Lamps for non-cutoff fixtures shall not exceed 100 watts.

(3) **Color Rendition:** The quality of the light source shall be a minimum of 65 CRI (color rendition index), as indicated by the lamp manufacturer’s data.

**C Light Trespass.** Outdoor lighting shall be selected, designed, located and installed so that spillover light and glare onto public rights-of-way and residential property is significantly limited.

(1) All outdoor lighting shall be located at least five (5) feet from a property line, or the light fixtures must be equipped with house-side shields, or the fixtures must provide a forward-type throw (IES Type IV) light distribution pattern.

(2) The maximum illumination at the property line shall not exceed 0.3 initial foot-candles when adjacent to residential sites and 1.0 initial foot-candles when adjacent to non-residential sites and public rights-of-way.

**D Canopies.** Lighting levels for convenience stores, gas stations, bank and pharmacy drive-thru's, large main entrance canopies, etc... shall be adequate to facilitate the various activities taking place at such locations.

(1) Canopies shall only use recessed lighting fixtures (including lenses) mounted flush with the bottom of the canopy. Lighting shall not be mounted on the top or fascia of the canopy. Canopy fascias shall not be illuminated.

(2) Illumination shall not exceed 12 initial foot-candles measured at the immediate perimeter of the canopy and 25 initial foot-candles measured under the canopy.

**E Wall- or Roof-Mounted Lighting.** Wall packs or shielded goose-neck fixtures on buildings may be used to illuminate pedestrian walkways, entrance areas, and yard areas within thirty (30) feet of the building. They are not intended to draw attention to the building or provide general building or site lighting. Luminaries on the exterior of the building shall be fully shielded (true cut-off type bulb or light source not visible from off-site) to direct the light vertically downward and be of low wattage (preferably one hundred (100) watts or lower).

**F Building Façades.** The purpose of lighting façades and building elements is to accent features, not to illuminate entire portions of buildings. Lighting fixtures shall be carefully selected, located, aimed, and shielded so that
direct illumination is focused exclusively on a portion of the building façade and not on adjacent streets or properties. Fixtures should be aimed downward rather than upward wherever possible. Floodlight fixtures must be equipped with shields and must not exceed the foot-candles specified for floodlighting surfaces in the most recent IESNA Lighting Handbook. Floodlights or other type of lighting attached to light poles that illuminate the site and/or building(s) are prohibited.

(G) Illumination of Outdoor Sports Fields and Performance Areas. Lighting of outdoor sports fields and performance areas are excluded from the regulation of this Section, but shall be installed in accordance with the following requirements:

(1) All such lighting fixtures shall be equipped with a glare control package (e.g., louvers, shields, or similar devices), and the fixtures shall be aimed so that their beams are directed and fall within the primary playing or performance area. Light trespass at the property line shall not exceed 0.3 initial foot-candles onto residential properties.

(2) The hours of operation for the lighting system for any game or event shall not exceed one (1) hour after the end of the game or event.

(H) Sign Lighting. Externally illuminated signs, advertising displays, billboards, building identification and monument signs shall use top mounted light fixtures which shine light downward and which are fully shielded or upward with pin-pointed light which are fully shielded.

(I) Flags, Statues, and Monuments. Outdoor light fixtures used to illuminate flags, statues, or any other objects mounted on a pole, pedestal, or platform shall use a very narrow cone of light for the purpose of confining the light to the object of interest and minimize spill-light and glare.

5-9.8 Nonconforming Luminaries

(A) Exterior lighting luminaries in existence on the effective date of this Section shall be exempt from these standards and shall be considered legally nonconforming. Such fixtures may be repaired, maintained and replaced.

(B) Exterior lighting luminaries existing on the effective date of this Section which are found to direct light or glare to residential properties or rights-of-way may be declared a public nuisance if the level of illumination exceeds the maximums set forth in Section 5-9.7(C). Such fixtures shall be altered to reduce the level of illumination to the levels in Section 5-9.7(C) within ninety (90) days of receiving a written notice of violation from the City.
5-9.9 Enforcement. The Building Official, or his/her designee, is hereby empowered and directed to administer and enforce the provisions of this Ordinance relating to outdoor light control.

SECTION 2. All Ordinances or parts of Ordinances in conflict herewith are repealed to the extent of conflict only.

SECTION 3. A person who violates this Ordinance is guilty of a separate offense for each day or part of day the violation is committed, continued, or permitted. Each offense, upon conviction, is punishable by a fine not to exceed $2,000.00.

SECTION 4. If any section, provision, subsection, paragraph, sentence, clause, phrase, or word in this Ordinance or application thereof to any person or circumstance is held invalid by any court of competent jurisdiction, such holdings shall not affect the validity of the remaining portions of this Ordinance, and the City Council of the City of Greenville, Texas hereby declares it would have enacted such remaining portions, despite such invalidity.

SECTION 5. This Ordinance shall be in full force and effect from and after February 5, 2011.

PASSED AND APPROVED, this the 25th day of January, 2011.

Thomas B. Oliver, Mayor

ATTEST:

Debra Newell, City Secretary

APPROVED AS TO FORM:

Brent A. Money, City Attorney