

**ORDINANCE NO. 649**

**AN ORDINANCE OF THE CITY OF WILSONVILLE AMENDING CHAPTER 4 OF THE WILSONVILLE CODE (WC) TO ADD A NEW CHAPTER, SECTION 4.199 - OUTDOOR LIGHTING, REGULATING OUTDOOR LIGHTING IN COMMERCIAL, INDUSTRIAL, PUBLIC FACILITY AND MULTI-FAMILY DEVELOPMENTS, AMENDING WC 4.001 – DEFINITIONS AND CREATING LIGHTING OVERLAY ZONES AND ADOPTING A LIGHTING OVERLAY ZONE MAP.**

WHEREAS, the City’s Development Review Boards (DRB) desire to provide consistent direction to applicant’s regarding the amounts, types and adequacy of outdoor lighting in different land uses; and

WHEREAS, this concern manifested itself in the form of a formal request from the DRB to the City Council and the Planning Commission to create legislation that would result in clear and concise criteria to guide the installation of outdoor lighting; and

WHEREAS, the City Council responded in 2005-06 as part of the Goal setting process stating “*adopt exterior lighting standards for new development*” as a supporting action to Council Goal #1 that was to “*Improve livability and safety of Wilsonville*”; and

WHEREAS, the Ordinance is intended to allow businesses to be treated equally in the land use review process, not allowing businesses of a similar nature to obtain different light levels; and

WHEREAS, development of outdoor lighting standards will guide the installation of exterior lights in new commercial, industrial, public **facility** and multi-family housing projects as well as major additions and modifications as defined by the Ordinance; and

WHEREAS, one of the main goals of the Ordinance are to permit all necessary and reasonable uses of outdoor lighting while reducing wasted energy and light pollution; and

WHEREAS, the Ordinance will promote sustainability by having the net effect of using energy more efficiently, resulting in potential cost savings to property owners and reductions in energy consumption over time; and

WHEREAS, light pollution is a broad term describing the undesirable side effects of outdoor lighting; and

WHEREAS, the most negative effects of outdoor lighting include:

- *Artificial sky glow*, the illumination of clouds and airborne particles, causing the sky to glow and preventing enjoyment of the night sky, astronomy and star gazing;
- *Light trespass*, the unwanted illumination caused by light from neighboring properties;
- *Glare*, when lighting causes discomfort or visual disability, potentially causing safety issues for pedestrians, bicyclists and the motoring public;
- *Circadian Interruption*, when lighting causes unwanted changes in the circadian cycles of living organisms;
- Impacts to flora and fauna, particularly those causing changes in habitat or behavior.

WHEREAS, the Ordinance is intended to allow reasonable uses of outdoor lighting for nighttime safety, utility, security, productivity, enjoyment and commerce; and

WHEREAS, the Ordinance will minimize glare, particularly in and around public rights-of-way; and reduce visual discomfort and improve visual acuity over large areas by avoiding “light islands” and “spotlighting” that result in reduced visual perception in areas adjacent to either the source of the glare or the area illuminated by the glare; and

WHEREAS, the Ordinance will minimize light trespass, so that each owner of property does not cause unreasonable light spillover to other property; and

WHEREAS, the Ordinance will assist to curtail the degradation of the nighttime environment and the night sky and is designed to minimize the negative effects of outdoor lighting, and promote good lighting practices which supports community livability; and

WHEREAS, good outdoor lighting will protect the natural environment, including wildlife, from the damaging effects of night lighting from human sources; and

WHEREAS, to date, there have been 13 Planning Commission work sessions on this topic (October 12, 2005; June 14, 2006; October 11, 2006; October 23, 2006; November 8, 2006; February 14, 2007; March 14, 2007; April 11, 2007; September 12, 2007; October 10, 2007; November 14, 2007; January 9, 2008 and February 13, 2008), two of which were joint work sessions with the DRB, one which included a tour of existing projects; and

WHEREAS, the City Council conducted a worksession on this matter on March 3, 2008; and

WHEREAS, after conducting a duly noticed public hearing on March 12, 2008 and soliciting public input, which there was none, the Planning Commission forwarded a unanimous recommendation of approval of the Outdoor Lighting Ordinance to the City Council; and

NOW, THEREFORE, THE CITY OF WILSONVILLE ORDAINS AS FOLLOWS:

Section 1. The Wilsonville Planning and Land Development Ordinance (Chapter 4 of the Wilsonville Code), Section 4.001 Definitions, is hereby amended by adding the following definitions:

24. Artificial Sky Glow. The brightening of the night sky attributable to human made sources of light.
44. Building Official. The person holding the position of Building Official of the City of Wilsonville.
46. Candela. The unit of luminous intensity of a lighting source emitted in a given direction.
47. Canopy. A roof-like covering over an area, in or under which a lighting fixture is mounted.
55. Common Residential Areas.
  - Areas shared in common by residents of buildings with three or more dwelling units, (i.e. common open space, play areas, trash receptacle areas, “common property” under a subdivision or partition declaration); and
  - Three or more open off-street stripped parking spaces, either abutting or within 10 feet of each other and not separated by a wall or other physical barrier between the two parking spaces, designated or set aside for use by the three or more dwelling units, regardless of whether the parking space is assigned for exclusive use of each dwelling unit or non-exclusively used by three or more dwelling units, and are either commonly owned or were developed for the purpose of serving the parking needs of “multiple dwellings” or multiple attached single-family dwellings, as defined in the Development Code.
72. Curfew. A time each night after which certain electric illumination must be turned off or reduced in intensity.
95. Façade. The exterior wall or elevation of a building.
110. Foot Candle. The density of luminous flux (lumens) incident at a point on a surface having an area of one square foot.
114. Glare. Light that causes visual discomfort or disability, and the wattage and/or light distribution is excessive for the purposes for which the illumination is necessary.
118. Hardscape Permanent improvements to a site, including but not limited to, parking lots, driveways, streets, plazas, sidewalks, walkways, bikeways, abutments, stairs, ramps, and architectural features, such as fountains and sculptures.

126. House Side Shield. For fully shielded luminaires only, an internal shield designed and installed by the luminaire manufacturer that significantly attenuates candlepower in the back photometric hemisphere at all angles greater than 30 degrees relative to nadir.
128. IESNA. The Illuminating Engineering Society of North America (see [www.iesna.com](http://www.iesna.com)).
135. Landscape Lighting. Luminaires attached to structures, mounted on poles or otherwise, or at grade (luminaire not to exceed 3 feet above grade) and used solely for landscape rather than area lighting.
138. Light Source (or Lamp): The actual bulb or lamp that emits the light.
139. Light Trespass. Spill light that because of quantitative, directional, or spectral content causes light level at the property line that is greater than as provided on Table 4 of this Code.
141. Lighting System. One or more luminaires, together with associated wires, conduits and poles that constitute the illumination system on the parcel.
142. Lighting Zones. Specific allowances and limitations for lighting systems and fixtures as specified in this Ordinance.
155. Lumen. The unit of luminous flux: a measure of the amount of light emitted by a lamp.
156. Luminaire (or "Light Fixture"). A complete lighting unit consisting of one or more electric lamps, the lamp holder, reflector, lens, ballast, and/or other components and accessories.
157. Luminance. The amount of light emitted in a given direction from a surface by the light source or by reflection from a surface. The unit is candela per square meter.
158. Luminous Flux. A measure of the total light output from a source, the unit being the lumen.
173. Mounting Height. The vertical distance between the lowest part of the luminaire and the ground surface directly below the luminaire.
174. Multi-family housing. For purposes of this ordinance, multi-family housing is defined as a building or structure that contains three or more dwelling units used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that are occupied for living purposes, apartment houses, condominiums, congregate residences, townhouses and similar non-transient dwellings.
175. Nadir. The downward direction; exactly vertical, directly below a luminaire.
190. Obtrusive Light. Glare and light trespass.
198. Ornamental or Accent Lighting. Outdoor lighting that is installed mainly or entirely for its decorative effect or to accent an object or a feature, rather than as an aid to visibility.
215. Photometric Test Report. A report by an independent testing laboratory or one certified by the National Institute of Standards and Technology (NIST) describing the candela distribution, shielding type, luminance, and other characteristics of a specific luminaire.

260. Shielding.

- Directional. A luminaire designed to be aimed or pointed.
- Fully Shielded. A luminaire emitting no more than 0.5 percent of its luminous flux above the horizontal plane, including any luminaire rated “full cut off” according to IESNA RP-8-01.
- Shielded. A luminaire emitting no more than 2 percent of its total luminous flux above the horizontal plane, including any luminaire rated “cutoff” according to IESNA RP-8-01.
- Partly Shielded. A luminaire emitting no more than 10 percent of its total luminous flux above the horizontal plane, including any luminaire rated “semi-cutoff” according to IESNA RP-8-01.
- Unshielded. A luminaire that may emit its flux in any direction.

297. Temporary Lighting. Lighting installed with temporary wiring and operated for less than 120 days in any calendar year.

Section 2: The Wilsonville Planning and Land Development Ordinance (Chapter 4 of the WC), is hereby amended by adding a new Section 4.199 as follows:

Section 4.199      **OUTDOOR LIGHTING**

- Section 4.199.10      Outdoor Lighting In General.
- Section 4.199.20      Applicability.
- Section 4.199.30      Lighting Zones.
- Section 4.199.40      Lighting Systems Standards for Approval.
- Section 4.199.50      Submittal Requirements.
- Section 4.199.60      Major Additions or Modifications.

Section 4.199.10.      Outdoor Lighting In General.

- (.01) Purpose: The purpose of this Code is to provide regulations for outdoor lighting that will:
- A. Permit reasonable uses of outdoor lighting for nighttime safety, utility, security, productivity, enjoyment and commerce.
  - B. Conserve energy and resources to the greatest extent possible.
  - C. Minimize glare, particularly in and around public rights-of-way; and reduce visual discomfort and improve visual acuity over large areas by avoiding “light islands” and “spotlighting” that result in reduced visual perception in areas adjacent to either the source of the glare or the area illuminated by the glare.

- D. Minimize light trespass, so that each owner of property does not cause unreasonable light spillover to other property.
  - E. Curtail the degradation of the nighttime environment and the night sky.
  - F. Preserve the dark night sky for astronomy and enjoyment.
  - G. Protect the natural environment, including wildlife, from the damaging effects of night lighting from human sources.
- (.02) Purpose Statement as Guidelines: Declaration of purpose statements are guidelines and not approval criteria in the application of WC Section 4.199.

Section 4.199.20. Applicability:

- (.01) This Ordinance is applicable to:
  - A. Installation of new exterior lighting systems in public **facility**, commercial, industrial and multi-family housing projects with common areas.
  - B. Major additions or modifications (as defined in this Section) to existing exterior lighting systems in public **facility**, commercial, industrial and multi-family housing projects with common areas.
- (.02) Exemption. The following luminaires and lighting systems are EXEMPT from these requirements:
  - A. Interior lighting.
  - B. Internally illuminated signs.
  - C. Externally illuminated signs.
  - D. Temporary lighting for theatrical, television, and performance areas.
  - E. Lighting in swimming pools and other water features governed by Article 680 of the National Electrical Code.
  - F. Building Code required exit path lighting.
  - G. Lighting specifically for stairs and ramps.
  - H. Temporary and seasonal lighting provided that individual lamps are 10 watts or less.
  - I. Lighting required and/or regulated by the City (i.e. construction related activities), Federal Aviation Administration, U.S. Coast Guard or other Federal or State agency.
  - J. Single-family residential lighting.
  - K. Code Required Signs.
  - L. American flag.
  - M. Landscape lighting.

- N. Lights approved by the City through an Administrative Review Temporary Use Permit process.
- O. Public street lights.
- P. ATM security lighting.

Section 4.199.30. Lighting Overlay Zones.

- (.01) The designated Lighting Zone as indicated on the Lighting Overlay Zone Map for a commercial, industrial, multi-family or public **facility** parcel or project shall determine the limitations for lighting systems and fixtures as specified in this Ordinance.
  - A. Property may contain more than one lighting zone depending on site conditions and natural resource characteristics.
- (.02) The Lighting Zones shall be:
  - A. LZ 0. Critical dark environments, sensitive wildlife areas and parks. This zone shall not be applied to areas zoned commercial, industrial, residential or agricultural.
  - B. LZ 1. Developed areas in City and State parks, recreation areas, SROZ wetland and wildlife habitat areas; developed areas in natural settings; sensitive night environments; and rural areas. This zone is intended to be the default condition for rural areas within the City.
  - C. LZ 2. Low-density suburban neighborhoods and suburban commercial districts, industrial parks and districts. This zone is intended to be the default condition for the majority of the City.
  - D. LZ 3. Medium to high-density suburban neighborhoods and districts, major shopping and commercial districts **as depicted on the Lighting Overlay Zone Map.**
  - E. LZ 4. Reserved for limited applications with special lighting requirements. This zone is appropriate for users who have unique site or operating circumstances that warrant additional light. This zone shall not be applied to residential or agricultural areas.
- (.03) Modification of Lighting Zones.
  - A. The City Council may modify the designated Lighting Zones of one or more parcels if the City Council finds that the original Lighting Zone was in error, a change in circumstances has occurred warranting the change since the designation was established or the purposes of this section are better served.
  - B. The Development Review Board (DRB) may modify the designated Lighting Zones as part of the Stage II, Site Design Review Process if the DRB finds that the original Lighting Zone was in error, or a change in circumstances has occurred warranting the change since the designation was established or the purposes of this section are better served.

- C. This ordinance establishes a Lighting Overlay Zone Map. The Planning Division shall maintain the current Lighting Overlay Zone Map.

Section 4.199.40. Lighting Systems Standards for Approval.

(.01) Non-Residential Uses and Common Residential Areas.

- A. All outdoor lighting shall comply with either the Prescriptive Option or the Performance Option below.
- B. Prescriptive Option. If the lighting is to comply with this Prescriptive Option, the installed lighting shall meet all of the following requirements according to the designated Lighting Zone.
- a. The maximum luminaire lamp wattage and shielding shall comply with Table 1.
  - b. The total lighting power for the site shall be less than or equal to the allowed lighting power. The allowed lighting power shall be determined according to Table 2.
  - c. The maximum pole or mounting height shall be consistent with Table 3.
  - d. Each luminaire shall be set back from all property lines at least 3 times the mounting height of the luminaire:
    - i. Exception 1: If the subject property abuts a property with the same base and lighting zone, no setback from the common lot lines is required.
    - ii. Exception 2: If the subject property abuts a property which is zoned (base and lighting) other than the subject parcel, the luminaire shall be setback three times the mounting height of the luminaire, measured from the abutting parcel's setback line. (Any variance or waiver to the abutting property's setback shall not be considered in the distance calculation).
    - iii. Exception 3: If the luminaire is used for the purpose of street, parking lot or public utility easement illumination and is located less than 3 mounting heights from the property line, the luminaire shall include a house side shield to protect adjoining property.
    - iv. Exception 4: If the subject property includes an exterior column, wall or abutment within 25 feet of the property line, a luminaire partly shielded or better and not exceeding 60 lamp watts may be mounted onto the exterior column, wall or abutment or under or within an overhang or canopy attached thereto.
    - v. Exception 5: Lighting adjacent to SROZ areas shall be set back 3 times the mounting height of the luminaire, or shall employ a house side shield to protect the natural resource area.
- C. Performance Option. If the lighting is to comply with the Performance Option, the proposed lighting design shall be submitted by the applicant for approval by the City meeting all of the following:



- a. The weighted average percentage of direct upright lumens shall be less than the allowed amount per Table 4.
- b. The maximum light level at any property line shall be less than the values in Table 4, as evidenced by a complete photometric analysis including horizontal illuminance of the site and vertical illuminance on the plane facing the site up to the mounting height of the luminaire mounted highest above grade. The Building Official or designee may accept a photometric test report, demonstration or sample, or other satisfactory confirmation that the luminaire meets the shielding requirements of **Table 1**.  
Luminaires shall not be mounted so as to permit aiming or use in any way other than the manner maintaining the shielding classification required herein:
  - i. Exception 1. If the property line abuts a public right-of-way, including a sidewalk or street, the analysis may be performed across the street at the adjacent property line to the right-of-way.
  - ii. Exception 2. If, in the opinion of the Building Official or designee, compliance is impractical due to unique site circumstances such as lot size or shape, topography, or size or shape of building, which are circumstances not typical of the general conditions of the surrounding area. The Building Official may impose conditions of approval to avoid light trespass to the maximum extent possible and minimize any additional negative impacts resulting to abutting and adjacent parcels, as well as public rights-of-way, based on best lighting practices and available lighting technology.
- c. The maximum pole or mounting height shall comply with Table 3.

D. Curfew. All prescriptive or performance based exterior lighting systems shall be controlled by automatic device(s) or system(s) that:

- a) Initiate operation at dusk and either extinguish lighting one hour after close or at the curfew times according to Table 5; or
- b) Reduce lighting intensity one hour after close or at the curfew time to not more than 50% of the requirements set forth in Table 2 unless waived by the DRB due to special circumstances; and
- c) Extinguish or reduce lighting consistent with a) and b) above on Holidays.

**The following are exceptions to curfew:**

- i. Exception 1: Building Code required lighting.
- ii. Exception 2: Lighting for pedestrian ramps, steps and stairs.
- iii. Exception 3: Businesses that operate continuously or periodically after curfew.

(.02) Special Permit for Specific Lighting Fixtures and Systems and When Exceeding Lighting Requirements.

- A. This section is intended to apply to situations where more than normal foot candles are required due to a unique circumstance or use or where it is absolutely

essential to perform the proposed activities after dark. All special permits shall be reviewed by the DRB.

- B. Upon issuance of a special permit by the Development Review Board (DRB), lighting systems not complying with the technical requirements of this Ordinance may be installed, maintained, and replaced for lighting that exceeds the maximums permitted by this Ordinance. This section is intended to be applied to uses such as sports lighting systems including but not limited to, sport fields and stadiums, such as baseball and football field lighting, tennis court lighting, swimming pool area lighting and prisons; other very intense lighting defined as having a light source exceeding 200,000 lumens or an intensity in any direction of more than 2,000,000 candelas; building façade lighting of portions of buildings over two stories high; and public monuments.
- C. To obtain such a permit, applicants shall demonstrate that the proposed lighting installation:
  - 1. Is within Lighting Zone 3 or above.
  - 2. Has been designed to minimize obtrusive light and artificial sky glow, supported by a signed statement from a registered civil or electrical engineer describing the mitigation measures. Such statement shall be accompanied by calculations indicating the light trespass levels (horizontal and vertical at ground level) at the property line.
  - 3. Will not create excessive glare, sky glow, or light trespass beyond that which can be reasonably expected by application of best lighting practices, and available technology.
  - 4. Provides appropriate lighting curfew hours based on the use and the surrounding areas.
- D. The DRB may impose conditions of approval to mitigate any negative impacts resulting to the abutting parcel, based on best lighting practices and available lighting technology.
- E. The City may charge a review fee and may, at the Building Official's option, employ the services of a qualified professional civil or electrical engineer to review such submittals and the cost thereof shall be an additional fee charged to the applicant.

#### Section 4.199.50. Submittal Requirements.

- (.01) Applicants shall submit the following information as part of DRB review or administrative review of new commercial, industrial, multi-family or public **facility** projects:
  - A. A statement regarding which of the lighting methods will be utilized, prescriptive or performance, and a map depicting the lighting zone(s) for the property.
  - B. A site lighting plan that clearly indicates intended lighting by type and location. For adjustable luminaires, the aiming angles or coordinates shall be shown.

- C. **For each luminaire type, drawings, cut sheets** or other documents containing specifications for the intended lighting including but not limited to, luminaire description, mounting, mounting height, lamp type and manufacturer, lamp watts, ballast, optical system/distribution, and accessories such as shields.
  - ~~D. For each luminaire type, a manufacturer's cut sheet matching the specifications above.~~
  - ~~E.D.~~ Calculations of allowed lighting power and actual lighting power demonstrating compliance with power limits. ~~Such calculations shall indicate the Lighting Zone.~~
  - ~~F.E.~~ Lighting plans shall be coordinated with landscaping plans so that pole lights and trees are not placed in conflict with one another. The location of lights shall be shown on the landscape plan. Generally, pole lights should not be placed within one pole length of landscape and parking lot trees.
  - ~~G.F.~~ Applicants shall identify the hours of lighting curfew.
  - ~~H. All lighting plans shall be prepared by a qualified licensed engineer.~~
- (.02) **In addition to the above submittal requirements**, Applicants using the Prescriptive Method shall submit the following information as part of the permit set plan review:
- A. A site lighting plan (items 1 A-G F, above) which indicates for each luminaire the 3 mounting height line to demonstrate compliance with the setback requirements. For luminaires mounted within 3 mounting heights of the property line the compliance exception or special shielding requirements shall be clearly indicated.
- (.03) **In addition to the above submittal requirements**, Applicants using the Performance Method shall submit the following information as part of the permit set plan review:
- A. Site plan showing horizontal isocandle lines, or the output of a point-by-point computer calculation of the horizontal illumination of the site, showing property lines and light levels immediately off of the subject property.
  - B. For each side of the property, the output of a point-by-point vertical footcandle calculation showing illumination in the vertical plane at the property line from grade to at least 10 feet higher than the height of the tallest pole.
  - C. Lighting plans shall be prepared by a qualified licensed engineer.**
- (.04) **In addition to the above applicable submittal requirements**, Applicants for Special Permits shall submit ~~all of the applicable items above~~ and the following to the DRB for review:
- A. Tabulation of International Engineering Society of North America (IESNA) lighting recommendations for each task including area illuminated, recommended illumination level, actual maintained illumination level, and luminaires used specifically to achieve the indicated criteria.
  - B. Lighting plans shall be prepared by a qualified licensed engineer.**

(.05) For all calculations, the following light loss factors shall be used unless an alternative is specifically approved by the City:

Metal halide	0.6
High pressure sodium	0.8
Compact fluorescent	0.7
Full size fluorescent	0.75
Incandescent	0.9
Halogen	0.95
Other	As approved

Section 4.199.60. Major Additions or Modifications to Pre-Existing Sites.

(01.) Major Additions. If a major addition occurs on a property, all of the luminaires on the site shall comply with the requirements of this Section. For purposes of this subsection, the following are considered to be major additions:

- A. Additions of 50 percent or more in terms of additional dwelling units, gross floor area, seating capacity, or parking spaces, either with a single addition or with cumulative additions after [effective date of this Ordinance].
- B. Modification or replacement of 50 percent or more of the outdoor lighting luminaires' within a 5-year timeframe existing as of [effective date of this Ordinance].

<b>Table 1: Maximum Wattage And Required Shielding</b>				
Lighting Zone	Fully Shielded	Shielded	Partly Shielded	Unshielded
LZ 0	55	None permitted	None permitted	None permitted
LZ 1	70	20	13	Low voltage landscape lighting 50 watts or less
LZ 2	100	35	39	Low voltage landscape lighting 50 watts or less
LZ 3	250	100	70	Landscape and facade lighting 100 watts or less; ornamental lighting on private streets of 39 watts and less
LZ 4	450	150	150	Landscape and facade lighting 250 watts or less; ornamental lights on private streets and lanterns 70 watts or less; marquee lighting not employing medium based lamps

**Table 2: Allowed Lighting Power Density**

(watts per square foot (w/ft<sup>2</sup>) unless otherwise noted)

Determine the allowed lighting power for each application by multiplying the area in plan by the allowed lighting power density for the application. Only one lighting power allowance can be claimed for an **allowed** area. The actual lighting power must be equal to or less than the sum of the allowed lighting power for all applications.

Lighting Application	Allowed Area	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Hardscape	Paved area plus 5 feet of the perimeter of adjacent unpaved land. Includes planters and landscaped areas less than 10 feet wide that are enclosed by hardscape on at least three sides	0.03	0.05	0.07	0.09	0.20
Building entrances*	Per Door (stated values are watts, not watts per square foot).	13	18	26	32	70
Building entry, drive-up sales, and general use canopies	Drip line area under canopy.	Not allowed	0.10	0.20	0.40	0.70
Vehicle Service Station Canopy	Drip line area under canopy	Not allowed	0.30	0.60	1.20	2.40
Outdoor Sales, Service or Industrial Lot	Portion of uncovered hardscape used exclusively for display of vehicles or other merchandise for sale, for the service of vehicles, aircraft or watercraft, or for exterior manufacturing.	Not allowed	0.25	0.45	0.90	1.80
Ornamental Lighting	Entire site	Not allowed	Not allowed	0.010	0.020	0.04
<b>Building Facade</b>	<b>Square foot of illuminated facade</b>	<b>0.00</b>	<b>0.00</b>	<b>0.18</b>	<b>0.35</b>	<b>0.50</b>
Landscape Lighting	Landscaped area	Exempt	Exempt	Exempt	Exempt	Exempt
ATM Security Lighting	Within 5 feet of ATM facility	Exempt	Exempt	Exempt	Exempt	Exempt
Flagpole lighting	Illuminating flags on flagpole	Exempt	Exempt	Exempt	Exempt	Exempt

**\*In addition to area lighting, an additional allowance per door is permitted.**

<b>Table 3: Maximum Lighting Mounting Height In Feet</b>			
Lighting Zone	Lighting for private roads, driveways, parking, bus stops and other transit facilities	Lighting for walkways, bikeways, plazas and other pedestrian areas	All other lighting
LZ 0	20	8	4
LZ 1	25	12	4
LZ 2	40	18	8
LZ 3	40	18	16
LZ 4	Height limit to be determined by Special Use Permit Only		

*Lighting mounted onto buildings or other structures shall not exceed a mounting height greater than 4 feet higher than the tallest part of the building or structure at the place where the lighting is installed, nor higher than 33.33 percent of the horizontal distance of the light from the nearest property line, whichever is less.*

<b>Table 4: Performance Method</b>			
Lighting Zone	Maximum percentage of direct uplight lumens	Maximum Light Level at Property Line	
		Horizontal plane at grade (foot candles - fc)	Vertical plane facing the site in question, from grade to mounting height of highest mounted luminaire (foot candles - fc)
LZ 0	0	0.01 fc	0.02 fc
LZ 1	1%	0.05 fc	0.1 fc
LZ 2	5%	0.2 fc	0.4 fc
LZ 3	10%	0.4 fc	0.8 fc
LZ 4	20%	0.8 fc	1.6 fc

<b>Table 5: Curfew</b>	
Lighting Zone	Curfew Time
LZ 0	8:00 PM (2000 hours)

LZ 1	
LZ 2	10:00 PM (2200 hours)
LZ 3	Midnight (2400 hours)
LZ 4	

**Section 3. Findings.** In support of the foregoing changes, the City Council hereby adopts as findings of fact and conclusions of law the staff report on this matter dated April 28, 2008 attached hereto and incorporated herein as Exhibit A.

**Section 4.** The City Council hereby adopts the Lighting Overlay Zone Map contained in the above described staff report (Map dated 'May 2008').

**Section 5. Severability:** In the event any provisions of this Ordinance shall be held invalid or unenforceable by any court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision hereof.

**Section 6:** The City Council hereby authorizes and directs the City Recorder to make any conforming changes necessary to amend Wilsonville Code in keeping with the adoption of these revisions.

SUBMITTED to the Wilsonville City Council and read for the first time at a regular meeting thereof on the 5<sup>th</sup> day of May, 2008, at the hour of 7:00 p.m. at the Wilsonville City Hall, 29799 SW Town Center Loop East, Wilsonville, Oregon, and scheduled for second reading on the 2<sup>nd</sup> day of June, 2008, commencing at the hour of 7:00 p.m. at the Wilsonville City Hall.

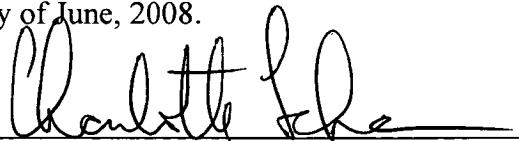
  
 Sandra C. King, MMC, City Recorder

ENACTED by the City Council on the 2nd day of June, 2008, by the following votes:

YES: -5- NO: -0-

  
 Sandra C. King, MMC, City Recorder

DATED and signed by the Mayor this 3<sup>rd</sup> day of June, 2008.



Charlotte Lehan, Mayor

SUMMARY OF VOTES:

Mayor Lehan	Yes
Councilor Kirk	Yes
Councilor Nunez	Yes
Councilor Knapp	Yes
Councilor Ripple	Yes



**WILSONVILLE PLANNING DIVISION**  
*Legislative STAFF REPORT*

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**HEARING DATE:** May 5, 2008 **and June 2, 2008**  
**DATE OF REPORT:** April 28, 2008; **Revised May 26, 2008**

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**APPLICATION NO:** LP06-0003

**REQUEST:** Proposed addition of a new Section (WC 4.199) to the Planning and Land Development Ordinance (Wilsonville's Development Code) creating standards to guide the installation of outdoor lighting. The proposed standards would apply to new commercial, industrial, public and multi-family development with common areas and off-street parking, major additions and modifications (as defined in the ordinance) to existing developments, as well as the creation of a lighting overlay zones and a lighting overlay zone map (Exhibit E).

**LOCATION:** Planned Development Industrial (PDI), Planned Development Commercial (PDC), multi-family residential (PDR 4, 5, 6 and 7) and Public Facilities zones, as well as Residential-Agricultural Holding (RA-H) Zoned lands when they develop consistent with the Comprehensive Plan (future designation of commercial, industrial, public or high-density residential).

**APPLICANT:** City of Wilsonville

**STAFF REVIEWER:** Chris Neamtzu, AICP, Long-Range Planning Manager  
(503) 682-4960 or [neamtzu@ci.wilsonville.or.us](mailto:neamtzu@ci.wilsonville.or.us).

**CRITERIA:** Wilsonville Comprehensive Plan: Goal 1.1- Citizen Involvement: Policy 1.1.1; Implementation Measures 1.1.1a, e, f; Goal 1.2; Policy 1.2.1; Goal 2.1; Policy 3.1.13: Semi-public utilities; Implementation Measure 3.1.6.h; 3.1.13.d; Goal 4.1; Implementation Measure 4.1.1.c; Policy 4.1.2 and 4.1.3; Implementation Measures 4.1.2.a; 4.1.3.a; 4.1.3.b; 4.1.3.d; 4.1.3.g; Policy 4.1.5; Planning and Land Development Ordinance: Section: 4.198: Zone Changes and Amendments to this Code-Procedures.

**SUMMARY:**

Following a year plus of concept and code language development, the Planning Commission conducted a public hearing on the Outdoor Lighting Standards on March 12, 2008. After deliberating on several issues that are covered in more detail below, the Planning Commission forwarded a recommendation of approval onto the City Council. Following the public hearing, Staff received an email from an interested party in Washington State, but has not received any additional input or comment on the proposal.

**Planning Commission Discussion:**

SROZ Setbacks: At the public hearing there was discussion regarding the setback of lights from SROZ areas. It was pointed out that it would be important to ensure that sites that contained SROZ were taken into consideration in the lighting design and not too much light applied to habitat areas. Due to the fact that the SROZ is an overlay zone, the proposed language at the time did not exactly address the Commission's concern. Staff has added language to Section 4.199.40 (.01) B. d. v. (exception 5) for Council's consideration as it relates to the protection of SROZ areas from too much light. The exception requires a 3 mounting height setback or incorporation of a house side shield to protect the resource area.

Map Modifications: There was discussion about specific areas on the Lighting Overlay Zone Map (Exhibit E) and a number of changes were recommended. They include 1) adding the Riverwood Center and Lowrie's Marketplace as well as the other small retail developments in the Boones Ferry commercial area; 2) refinement of the LZ2 boundary at Villebois to follow the Village Center boundary in SAP Central; and 3) deletion of the lighting zone for sports field complex in Memorial Park as it would require a special permit. SROZ areas are not included on the map, but could be easily incorporated if the Council desires. A revised map is included in your packet incorporating the changes requested by the Commission.

Curfew: Staff proposed adding language to the curfew section that would trigger lighting levels to be reduced at "close or 10 pm, whichever is earlier". The Commission discussed this point and felt that reducing light at closing time was too early in that many employees work late and there were safety concerns. There was no resolution on this item at the Commission hearing. Staff recommends that a reduction in lighting levels one hour after close would allow for the vast majority of employees to leave before the light levels were reduced. A section on lowering or extinguishing lights on holidays has also been added. This language has been added to Section 4.199.40 D.

**BACKGROUND:**

For years, the City's Development Review Boards (DRB) have struggled to provide consistent direction to applicant's regarding the amounts, types and adequacy of outdoor lighting in vastly different land uses. This on-going frustration manifested itself in the form of a formal request from the DRB to the City Council and the Planning Commission to create legislation that would result in clear and concise criteria to guide the installation of outdoor lighting. The City Council responded in 2005-06 by creating an implementation measure that stated "*adopt exterior lighting standards for new development*" as a supporting action to Goal #1 that was to "*Improve livability and safety of Wilsonville*".

Over the past year, with assistance from the Development Review Board and consultant Jim Benya, the Planning Commission has been working on a new, state of the art lighting ordinance. Development of outdoor lighting standards will guide the installation of exterior lights in new commercial, industrial, public and multi-family housing projects. Its goals are to permit all necessary and reasonable uses of outdoor lighting while reducing wasted energy and light pollution. While the proposed code is not a sustainability policy per se, it will have the net effect of using energy more efficiently, resulting in potential cost savings to property owners and reductions in energy consumption over time. To date, there have been 13 Planning Commission

work sessions on this topic, two of which were joint work sessions with the DRB. One session included a tour of existing projects. The City Council has had one work session to date.

The proposed ordinance applies to all new commercial, industrial, and public outdoor lighting, (but does not include public street lights) including new lighting, and major additions (as defined in the proposed ordinance) to existing development. There are few outright exceptions. They are listed in the draft Ordinance. One of the important benefits of the proposed Ordinance is that it will create a level playing field and allow businesses to be treated equally in the land use review process, not allowing businesses of a similar nature to obtain different light levels. The lack of clear criteria has caused this disparity over the years, which is one of the main reasons why standards are needed. The proposed Ordinance will give the DRB the tools it needs to review lighting proposals in a fair and equitable way.

### **Basic Principles:**

Light pollution is a broad term describing the undesirable side effects of outdoor lighting.

The most negative effects of outdoor lighting include:

- *Artificial sky glow*, the illumination of clouds and airborne particles, causing the sky to glow and preventing enjoyment of the night sky, astronomy and star gazing;
- *Light trespass*, the unwanted illumination caused by light from neighboring properties;
- *Glare*, when lighting causes discomfort or visual disability, potentially causing safety issues for pedestrians, bicyclists and the motoring public;
- *Circadian Interruption*, when lighting causes unwanted changes in the circadian cycles of living organisms;
- Other impacts to flora and fauna, particularly those causing changes in habitat or behavior.

Most light pollution is the result of carelessly applied lighting. The proposed Ordinance helps prevent most light pollution by limiting the wattage of lighting that can be used, by requiring most lighting to be shielded, and requiring lighting to be located thoughtfully with respect to mounting height, setback, shielding and adjacent land uses. In addition, while the Ordinance does not absolutely prohibit incandescent lighting, preference is given for energy efficient lighting, and for most installations, the use of energy efficient sources is strongly urged.

### **Demonstrating Compliance with the Ordinance:**

***Lighting for Homes*** - Lighting for single family detached homes and lower density multi-family structures such as townhouses and duplexes are exempt. However, common area lighting for higher density multi-family buildings, such as apartment buildings and multiple use structures with off-street parking and common areas, is required to comply.

***Private Non-Residential Uses*** - The Ordinance governs all new lighting and contains compliance triggers for major modifications as defined in the proposed Ordinance. For new installations including major additions and alterations, lighting plans (including schedules and cut sheets) must be supplied together with complete calculations showing compliance. Lighting plans with fixture schedules and calculations must be submitted for approval along with compliance

documentation forms (*compliance documentation forms will be created and available on the City's web site*).

**Public Uses** – The proposed Ordinance would apply to public projects that include the City of Wilsonville and the West Linn/Wilsonville School District.

There are two alternative calculation procedures spelled out in the proposed Ordinance: the **performance method**, which requires complete computer lighting calculations, and the **prescriptive method**, which is very straightforward, simple and does not require special computer calculations.

**Special Permit Applications** - Some lighting systems, such as sports field lighting or prisons can't comply with the Ordinance because they generate too much light. A special permit will be required. Applicants may be required to submit detailed calculations and to pay for an independent engineering review.

**Street Lighting Applications** – Street lights are not proposed to be addressed in the draft Ordinance. On-going discussions at the State and Federal levels about energy code revisions and efforts to reduce energy waste, greenhouse gases, carbon footprints and sustainability will drive modifications to how we light the world. These discussions will ultimately affect many existing lighting standards, including roadway lighting recommended standards such as AASHTO, which have been adopted locally as standards. These upcoming changes will provide an opportunity for the City to re-visit the topic of street lighting.

It is important to point out, that with the exception of residential street lighting (i.e. 'acorn top' lights), many of the City's street lights are dark sky compliant. This would include "shoe box" and "flat-lens cobra head" light fixtures that light collector and arterial roadways citywide.

In future residential areas, the City can encourage the use of dark sky compliant fixtures. However, PGE currently offers one architectural aesthetically pleasing selection (which costs more to buy and maintain) and several compliant but not attractive fixtures (i.e. shoe box designs). The City is limited by its contractual arrangement with PGE, which is currently Schedule B (City owned lights and poles, PGE maintained). Other PGE offered options include Schedule A (PGE owned and maintained) and Schedule C (city owned and maintained). The real issue involves encouraging PGE to provide more 'dark sky friendly' light fixture alternatives and lower wattages to reduce cost and wasted energy.

**Incentives:**

Staff recognizes that with all new innovative concepts, and creative thinking, there are communication and perception challenges. One of the main challenges is communicating to the public the importance of guiding the proper installation of outdoor lighting to protect and enhance the livability of the community. There are general concerns that the proposed Ordinance will add un-necessary additional costs to projects, cause potential delays, and create unwarranted layers of additional regulation. The dark sky movement is rapidly evolving across the Country. Oregon is not at the forefront of this issue. As a result, obtaining up-to-date

information on retrofit opportunities and energy efficient products can be a challenge for developers of all sizes.

Staff would point out that while the concerns are valid, the proposed code should not cause additional project costs as there are compliant light fixtures at every price point in every style and delays are not problematic as the City operates efficiently under the statutory 120-day time clock. The proposed lighting ordinance provides tools necessary to promote equity, protect community image, and enhance and support an attractive but functional outdoor environment that balances safety with community livability.

Staff is proposing several tools that will assist the public in understanding the importance of the Ordinance concepts, as well as attempts to make the process as user friendly as possible.

- A user guide has been developed to inform and assist the public with the specifics of the Ordinance (Exhibit C). Pages on the city's web site (Exhibit F) will be created containing information on lighting vendors and other applicable information that can assist developers in broadening their selections and obtaining up to date information on products and services, while understanding the intent of the Ordinance. Draft web pages are included in your packet.
- Staff will be trained to perform the reviews, and only in extreme or highly complicated circumstances will outside consultants be required. Outside consultant costs will be billed to the applicant.
- Staff will spend the additional time necessary to help business and property owners to understand the concepts and assist developers with the specifics of the process. Materials will be assembled to assist with the specifics of compliance.
- A list of qualified lighting engineers, designers and consultants has been created to allow applicant's to select individuals of their choice (Exhibit F).

#### **Lighting Overlay Zone Map:**

Included with, and proposed to be adopted as part of the proposed Ordinance is a lighting overlay zone map (Exhibit E) establishing lighting zones. Lighting Zone 2 is proposed as the default condition for most of the City, with Lighting Zone 3 proposed for the Town Center area, Boones Ferry commercial area, ~~Villebois Village Center~~ and Argyle Square. These areas are essentially the major commercial cores of the City and as such have a higher lighting designation. Memorial Park has been placed in Lighting Zone 1 due to the substantial amount of wildlife habitat that the park contains. The sports field complex in Memorial Park has been removed from a lighting zone at the direction of the Planning Commission as it would require a special permit given the high amounts of light that are generated. The lighting zone for the Coffee Creek Correctional Facility has also been removed, as the prison has such specific lighting requirements for safety and security that the Ordinance could not apply.

#### **Modifications from Version 3.0**

The Ordinance (V.4.0) reviewed by the Planning Commission at the public hearing on March 12, 2008 contained a number of modifications from Version 3.0. The changes are:

1. Addition of '*public*' to the list of applicable uses contained in the Ordinance title.
2. Deletion of street lights from the '*applicability*' section.
3. Addition of '*street lights*' to the list of exemptions.
4. Change '*City Engineer*' to '*Building Official*' under performance option.
5. Minor spelling corrections and editing.
6. Changes to the Lighting Zones language moving language from LZ3 to LZ2.
7. Modifications to the '*major additions*' section clarifying intent.
8. Change to exemption F. stating *building code required exit path lighting* from *code required exits*.
9. Addition of *after curfew* to exception 3, replacing *throughout the night*.

**Modifications from the Planning Commission Public Hearing:**

Staff has incorporated language to address lighting setbacks and shielding from SROZ areas, and has updated the map consistent with PC direction. Additional language is proposed to address the issue of curfew. This was one area that the PC did not come to consensus on. There has been some reformatting done to incorporate the definitions and make the Ordinance consistent with the WC outline. Several small changes have been made at the direction of the City Attorney's office to increase the readability of the Ordinance and to provide language consistency.

**RECOMMENDATION:** Staff respectfully recommends that the City Council conduct the public hearing on the Outdoor Lighting Standards, provide Staff with direction and adopt the proposed Ordinance on first reading.

**BACKGROUND:**

- In 2005, at the request of the DRB the City Council established an implementation measure that stated "*adopt exterior lighting standards for new development*" as a supporting action to Goal #1 that was to "*Improve livability and safety of Wilsonville*".
- Staff has conducted a total of 14 work sessions with the CC, PC and DRB on the topic of outdoor lighting. The Planning Commission work sessions were held on October 12, 2005; June 14, 2006; October 11, 2006; October 23, 2006\*; November 8, 2006; February 14, 2007; March 14, 2007; April 11, 2007; September 12, 2007\*; October 10, 2007; November 14, 2007; January 9, 2008; February 4, 2008 and February 13, 2008. Work sessions with an asterisk were joint work sessions with the DRB. The September 12, 2007 work session included a bus tour of the community to look at and discuss outdoor lighting practices and to observe both good and bad lighting in the field.
- The minutes and materials distributed at these work sessions are contained in the public record for this application (Exhibit B).
- City Staff met with Kristin Cook, Supervisor of Outdoor Lighting for PGE on September 11, 2007.
- The City Council conducted a work session on outdoor lighting February 4, 2008.
- In the December 2007 issue of the Chamber of Commerce newsletter the *Catalyst*, Government Affairs Committee Chair and Planning Commissioner Ray Phelps included a

detailed article on the draft proposal and included City staff contact information. The *Catalyst* is sent to every Chamber member. Staff did not receive any input or questions from Chamber members on the proposal.

- At the beginning of February 2008, Staff sent all of the draft materials to each member of the DRB to keep them informed and requested their continued participation in the process. As of the requested deadline for comment (February 20, 2008) Staff had received no input or comment on the draft Ordinance from members of the DRB.
- Public hearing notices were sent to each owner of existing and planned commercial, industrial, public and multi-family zoned property in the City. To date, there have been numerous inquiries on this topic and Staff has been able to address questions raised.
- On March 12, 2008, the Planning Commission conducted a public hearing on the Outdoor Lighting Standards. The public was not in attendance and no written testimony was provided. The Planning Commission after deliberating on a number of issues forwarded a unanimous recommendation of approval of the proposal onto the City Council.
- Since the Planning Commission public hearing, Staff has received one email from an interested party in Washington, and has not received any additional testimony written or oral.

## **FINDINGS:**

*GOAL 1.1 To encourage and provide means for interested parties to be involved in land use planning processes, on individual cases and City-wide programs and policies.*

*Policy 1.1.1 The City of Wilsonville shall provide opportunities for a wide range of public involvement in City planning programs and processes.*

Response: From October 2005 through February 2008 the Planning Commission conducted 13 work sessions on the topic of outdoor lighting. These meetings were open to the public and were noticed in the standard locations throughout the community, as well as in the Spokesman. The Spokesman has written two articles on the topic. The articles are contained in the Planning Commission record. Following the Spokesman articles, City Staff received two emails from citizens supporting adoption of the Ordinance. Public notice of the hearing was mailed to all affected property owners, as well as agencies and interested individuals. Prior to the Commission public hearing, there were a number of inquiries on the proposed ordinance from both businesses and residents. These criteria are supported by the process that has been conducted as well as the public hearing process that will be held with the PC and CC.

*Implementation Measure 1.1.1.a Provide for early public involvement to address neighborhood or community concerns regarding Comprehensive Plan and Development Code changes. Whenever practical to do so, City staff will provide information for public review while it is still in "draft" form, thereby allowing for community involvement before decisions have been made.*

Response: As is evidenced by the year plus of work the Planning Commission has undertaken, there has been ample early opportunity to address neighborhood and community concerns. Draft versions

of the proposed ordinance have been available in paper and digital form, as well as on the city web site since inception of the project. This criterion is met.

*Implementation Measure 1.1.1.e Encourage the participation of individuals who meet any of the following criteria:*

1. *They reside within the City of Wilsonville.*
2. *They are employers or employees within the City of Wilsonville.*
3. *They own real property within the City of Wilsonville.*
4. *They reside or own property within the City's planning area or Urban Growth Boundary adjacent to Wilsonville.*

Response: Through the work session schedule, the articles in the Spokesman, the information published in the Chamber newsletter, public hearing notices, and available PC records on the web, Staff has encouraged the participation of a wide variety of individuals addressing each of the groups above. This criterion is met.

*Implementation Measure 1.1.1.f Establish and maintain procedures that will allow any interested parties to supply information.*

Response: The established procedures, and enhanced city web site all allow interested parties to supply information. The city's recently launched Citizen Request Module (CRM) has provided a new venue for citizens to comment on projects. Staff received two comments in support of the work via the CRM. This criterion is met.

*GOAL 1.2: For Wilsonville to have an interested, informed, and involved citizenry.*

*Policy 1.2.1 The City of Wilsonville shall provide user-friendly information to assist the public in participating in City planning programs and processes.*

Response: Through the 13 meeting worksession schedule, the articles in the Spokesman, the information published in the Chamber newsletter, public hearing notices, and available PC records on the city web site, Staff has encouraged the participation of a wide variety of individuals addressing each of the groups above and have tried to maintain an open process informing the public. The companion document to the Ordinance (the outdoor lighting ordinance informational pamphlet) is intended to provide a user friendly document. Material is also being prepared for inclusion on the City's web site. This criterion is met.

*GOAL: 2.1 To allow for urban growth while maintaining community livability, consistent with the economics of development, City administration, and the provision of public facilities and services.*

Response: The proposed Ordinance strives to achieve the balance of allowing well managed growth by guiding proper lighting outdoor lighting, which in turn will protect community livability. Lighting options of every style at every price can comply with the standards of the Ordinance supporting the economics of development. This criterion is met.



*Implementation Measure 3.1.6.h The City shall periodically review and update its street lighting standards in the interest of public safety. Energy conservation shall also be considered in setting these standards.*

*Policy 3.1.13 The City of Wilsonville shall coordinate planning activities with the utility companies, to insure orderly and efficient installation of needed service lines and equipment.*

Response: The City currently has a Schedule B arrangement with PGE. Schedule B is where the City owns the lights and PGE maintains the lights. AASHTO is the guiding document for street lighting in Wilsonville, and have been adopted as into the Public Works Standards. As national efforts unfold, there will likely be changes to the national recommended standards that will allow the City to easily modify existing standards consistent with new requirements. There is routine and frequent coordination with utility companies to ensure the orderly and efficient installation of needed service lines and equipment. These criteria are satisfied.

*Implementation Measure 3.1.13.d To reduce future demands for electrical energy, the City shall:*

- 1. Encourage incorporation of alternative energy sources (e.g., solar, etc.) into new construction, as well as retrofitting of existing development.*
- 2. Encourage energy efficient site and building designs. The City should also consider joint efforts with PGE and the Army Corps of Engineers and other government agencies, to study the potential for local power generation.*
- 3. To set an example for proposed developments, the City will incorporate energy-efficient designs into construction of City buildings and facilities.*
- 4. The City will review and revise existing street lighting standards to provide adequate safety while minimizing the demand for power (e.g., use of minimum number of lights, use of energy-efficient lights such as high pressure sodium lamps, etc.).*

Response: While the proposal does not incorporate alternative energy sources, it does raise the awareness of energy efficient lighting systems resulting in reductions in future energy demands for projects that comply with the requirements. Throughout this process, the City's street lighting standards have been a topic of discussion. While the objective of minimizing the number and luminance levels of street lights was not achieved in this proposal, the issue is not resolved. Staff will continue to track the National and State energy efforts and will return to the Planning Commission and City Council with updates and new proposals as the efforts unfold. These criteria are supported by the proposal.

*GOAL 4.1 To have an attractive, functional, economically vital community with a balance of different types of land uses.*

*Policy 4.1.1 The City of Wilsonville shall make land use and planning decisions to achieve Goal 4.1.*

Response: The regulation of outdoor lighting will result in maintenance of an attractive and functional community by reducing the potential for unwarranted glare and over lighting of

property. Too much glare and excessive light can reduce community appeal, and impact aesthetics. The City's review and adoption of standards to address outdoor lighting supports Goal 4.1. These criteria are supported by the proposal.

*Implementation Measure 4.1.1.c The City will continue to support a cooperative and active working relationship with the business community through the Chamber of Commerce as well as those businesses that are not members of the Chamber of Commerce and will seek their input when making decisions having economic impacts on the business community.*

Response: In the December issue of the Chamber of Commerce newsletter the *Catalyst*, Government Affairs Committee Chair and Planning Commissioner Ray Phelps included a detailed article on the draft proposal and included City staff contact information. The article is contained in the Planning Commission record. The *Catalyst* is sent to every Chamber member. Staff did not receive any input on the article. This criterion is generally supported by the public process that has been conducted on outdoor lighting.

*Policy 4.1.2 The City of Wilsonville shall encourage commercial growth primarily to serve local needs as well as adjacent rural and agricultural lands.*

Response: **The draft proposal applies to new commercial development. The Town Center area, Boones Ferry commercial area and Argyle Square are proposed to be in Lighting Zone 3, which would allow more light than the rest of the City. Businesses locating in these areas should be encouraged by the provision of additional light. This criterion is generally supported by the proposal.**

*Implementation Measure 4.1.2.a Encourage commercial uses which are compatible with the residential nature of the community, and are complementary to or supportive of industrial development in the City.*

Response: By adopting outdoor lighting standards, the City will be protecting residential areas of the community from excessive light. One of the fundamentals of the proposal is to keep light on site, and not allow light to spill un-necessarily off site onto adjacent property, particularly residential property. This approach addresses compatibility between land uses. This criterion is supported by the proposal.

*Policy 4.1.3 City of Wilsonville shall encourage light industry compatible with the residential and urban nature of the City.*

Response: By adopting outdoor lighting standards, the City will be protecting residential areas of the community from excessive light. One of the fundamentals of the proposal is to keep light on site, and not allow light to spill un-necessarily off site onto adjacent property, particularly residential property. This approach addresses compatibility between land uses. This criterion is supported by the proposal.

*Implementation Measure 4.1.3.a Develop an attractive and economically sound community.*

*Implementation Measure 4.1.3.b Maintain high-quality industrial development that enhances the livability of the area and promotes diversified economic growth and a broad tax base.*

*Implementation Measure 4.1.3.d Encourage industries interested in and willing to participate in development and preservation of a high-quality environment. Continue to require adherence to performance standards for all industrial operations within the City.*

Response: Properly designed and installed lighting assists in achieving an attractive community. Attractive communities are desirable for conducting business. Regulating the amount of light and glare on new projects directly contributes to maintaining a high quality built environment, and supports a livable community. These criteria are satisfied.

*Implementation Measure 4.1.3.g Encourage energy-efficient, low-pollution industries.*

Response: New projects that comply with the Ordinance will have more energy efficient lighting systems. This criterion is met.

*Policy 4.1.5 Protect valuable resource lands from incompatible development and protect people and property from natural hazards.*

Response: By taking into consideration the location of critical wildlife habitat on sites throughout the City, appropriate lighting zones can be established resulting in minimization of wildlife and development conflicts and incompatible development. This criterion is supported by the proposal.

**Planning and Land Development Code, Section 4.197, Zone Changes and Amendments to This Code:**

*(.01) The following procedure shall be followed in applying for an amendment to the text of this Chapter:*

*A. The Planning Commission shall conduct a public hearing on the proposed amendment at its earliest practicable meeting after it is proposed and shall, within forty (40) days after concluding the hearing, provide a report and recommendation to the City Council regarding the proposed amendment. The findings and recommendations of the Commission shall be adopted by resolution and shall be signed by the Chair of the Commission.*

Response: The Commission has taken ample time to create the proposed code in preparation for public hearings. Additional time was warranted to solicit public input through the work session schedule, and to develop an understanding of the technical issues associated with outdoor lighting. Following public hearings, the Planning Commission forwarded a recommendation of approval of the Ordinance. This criterion is met.

*B. In recommending approval of a proposed text amendment, the Planning Commission shall, at a minimum, adopt findings relative to the following:*

*1. That the application was submitted in compliance with the procedures set forth in Section 4.008; and*

*2. The amendment substantially complies with all applicable goals, policies and objectives set forth in the Comprehensive Plan; and*

*3. The amendment does not materially conflict with, nor endanger, other provisions of the text of the Code; and*

*4. If applicable, the amendment is necessary to insure that the City's Land Use and Development Ordinance complies with mandated requirements of State or Federal laws and/or statutes.*

Response: The above criteria are substantially met as is evidenced by the file on this matter, the Planning Commission record and the narrative and findings of fact contained in this staff report. State and Federal laws/statutes are not in conflict with the proposal.

EXHIBITS:

- A. Draft Outdoor Lighting Ordinance
- B. Planning Commission Record of Work session materials and meeting minutes from 13 meetings over the course of October 12, 2005 through February 13, 2008.
- C. User Guide to the Outdoor Lighting Ordinance
- D. Lighting Overlay Zone Map
- E. Revised Lighting Overlay Zone Map dated April 2008
- F. Draft City of Wilsonville Outdoor Lighting Website
- G. Revised Lighting Overlay Zone Map dated May 2008**
- H. Memo to Council from Chris Neamtzu dated May 26, 2008**

**REVISED Language in Bold (5/26/08)**

**Section 4.199 OUTDOOR LIGHTING**

- 24. Artificial Sky Glow. The brightening of the night sky attributable to human made sources of light.
- 44. Building Official. The person holding the position of Building Official of the City of Wilsonville.
- 46. Candela. The unit of luminous intensity of a lighting source emitted in a given direction.

47. Canopy. A roof-like covering over an area, in or under which a lighting fixture is mounted.
55. Common Residential Areas.
- Areas shared in common by residents of buildings with three or more dwelling units, (i.e. common open space, play areas, trash receptacle areas, “common property” under a subdivision or partition declaration); and
  - Three or more open off-street stripped parking spaces, either abutting or within 10 feet of each other and not separated by a wall or other physical barrier between the two parking spaces, designated or set aside for use by the three or more dwelling units, regardless of whether the parking space is assigned for exclusive use of each dwelling unit or non-exclusively used by three or more dwelling units, and are either commonly owned or were developed for the purpose of serving the parking needs of “multiple dwellings” or multiple attached single-family dwellings, as defined in the Development Code.
72. Curfew. A time each night after which certain electric illumination must be turned off or reduced in intensity.
95. Façade. The exterior wall or elevation of a building.
110. Foot Candle. The density of luminous flux (lumens) incident at a point on a surface having an area of one square foot.
114. Glare. Light that causes visual discomfort or disability, and the wattage and/or light distribution is excessive for the purposes for which the illumination is necessary.
118. Hardscape Permanent improvements to a site, including but not limited to, parking lots, driveways, streets, plazas, sidewalks, walkways, bikeways, abutments, stairs, ramps, and architectural features, such as fountains and sculptures.
126. House Side Shield. For fully shielded luminaires only, an internal shield designed and installed by the luminaire manufacturer that significantly attenuates candlepower in the back photometric hemisphere at all angles greater than 30 degrees relative to nadir.
128. IESNA. The Illuminating Engineering Society of North America (see [www.iesna.com](http://www.iesna.com)).
135. Landscape Lighting. Luminaires attached to structures, mounted on poles or otherwise, or at grade (luminaire not to exceed 3 feet above grade) and used solely for landscape rather than area lighting.
138. Light Source (or Lamp): The actual bulb or lamp that emits the light.
139. Light Trespass. Spill light that because of quantitative, directional, or spectral content causes light level at the property line that is greater than as provided on Table 4 of this Code.
141. Lighting System. One or more luminaries, together with associated wires, conduits and poles that constitute the illumination system on the parcel.
142. Lighting Zones. Specific allowances and limitations for lighting systems and fixtures as specified in this Ordinance.

155. Lumen. The unit of luminous flux: a measure of the amount of light emitted by a lamp.
156. Luminaire (or “Light Fixture”). A complete lighting unit consisting of one or more electric lamps, the lamp holder, reflector, lens, ballast, and/or other components and accessories.
157. Luminance. The amount of light emitted in a given direction from a surface by the light source or by reflection from a surface. The unit is candela per square meter.
158. Luminous Flux. A measure of the total light output from a source, the unit being the lumen.
173. Mounting Height. The vertical distance between the lowest part of the luminaire and the ground surface directly below the luminaire.
174. Multi-family housing. For purposes of this ordinance, multi-family housing is defined as a building or structure that contains three or more dwelling units used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that are occupied for living purposes, apartment houses, condominiums, congregate residences, townhouses and similar non-transient dwellings.
175. Nadir. The downward direction; exactly vertical, directly below a luminaire.
190. Obtrusive Light. Glare and light trespass.
198. Ornamental or Accent Lighting. Outdoor lighting that is installed mainly or entirely for its decorative effect or to accent an object or a feature, rather than as an aid to visibility.
215. Photometric Test Report. A report by an independent testing laboratory or one certified by the National Institute of Standards and Technology (NIST) describing the candela distribution, shielding type, luminance, and other characteristics of a specific luminaire.
260. Shielding.
- Directional. A luminaire designed to be aimed or pointed.
  - Fully Shielded. A luminaire emitting no more than 0.5 percent of its luminous flux above the horizontal plane, including any luminaire rated “full cut off” according to IESNA RP-8-01.
  - Shielded. A luminaire emitting no more than 2 percent of its total luminous flux above the horizontal plane, including any luminaire rated “cutoff” according to IESNA RP-8-01.
  - Partly Shielded. A luminaire emitting no more than 10 percent of its total luminous flux above the horizontal plane, including any luminaire rated “semi-cutoff” according to IESNA RP-8-01.
  - Unshielded. A luminaire that may emit its flux in any direction.
297. Temporary Lighting. Lighting installed with temporary wiring and operated for less than 120 days in any calendar year.

Section 4.199.10. Outdoor Lighting In General.

- (.01) Purpose: The purpose of this Code is to provide regulations for outdoor lighting that will:
- A. Permit reasonable uses of outdoor lighting for nighttime safety, utility, security, productivity, enjoyment and commerce.
  - B. Conserve energy and resources to the greatest extent possible.
  - C. Minimize glare, particularly in and around public rights-of-way; and reduce visual discomfort and improve visual acuity over large areas by avoiding “light islands” and “spotlighting” that result in reduced visual perception in areas adjacent to either the source of the glare or the area illuminated by the glare.
  - D. Minimize light trespass, so that each owner of property does not cause unreasonable light spillover to other property.
  - E. Curtail the degradation of the nighttime environment and the night sky.
  - F. Preserve the dark night sky for astronomy and enjoyment.
  - G. Protect the natural environment, including wildlife, from the damaging effects of night lighting from human sources.
- (.02) Purpose Statement as Guidelines: Declaration of purpose statements are guidelines and not approval criteria in the application of WC Section 4.199.

Section 4.199.20. Applicability:

- (.01) This Ordinance is applicable to:
- A. Installation of new exterior lighting systems in public **facility**, commercial, industrial and multi-family housing projects with common areas.
  - B. Major additions or modifications (as defined in this Section) to existing exterior lighting systems in public **facility**, commercial, industrial and multi-family housing projects with common areas.
- (.02) Exemption. The following luminaires and lighting systems are EXEMPT from these requirements:
- A. Interior lighting.
  - B. Internally illuminated signs.
  - C. Externally illuminated signs.
  - D. Temporary lighting for theatrical, television, and performance areas.
  - E. Lighting in swimming pools and other water features governed by Article 680 of the National Electrical Code.
  - F. Building Code required exit path lighting.
  - G. Lighting specifically for stairs and ramps.
  - H. Temporary and seasonal lighting provided that individual lamps are 10 watts or less.

- I. Lighting required and/or regulated by the City (i.e. construction related activities), Federal Aviation Administration, U.S. Coast Guard or other Federal or State agency.
- J. Single-family residential lighting.
- K. Code Required Signs.
- L. American flag.
- M. Landscape lighting.
- N. Lights approved by the City through an Administrative Review Temporary Use Permit process.
- O. Public street lights.
- P. ATM security lighting.

Section 4.199.30. Lighting Overlay Zones.

- (.01) The designated Lighting Zone as indicated on the Lighting Overlay Zone Map for a commercial, industrial, multi-family or public **facility** parcel or project shall determine the limitations for lighting systems and fixtures as specified in this Ordinance.
  - A. Property may contain more than one lighting zone depending on site conditions and natural resource characteristics.
- (.02) The Lighting Zones shall be:
  - A. LZ 0. Critical dark environments, sensitive wildlife areas and parks. This zone shall not be applied to areas zoned commercial, industrial, residential or agricultural.
  - B. LZ 1. Developed areas in City and State parks, recreation areas, SROZ wetland and wildlife habitat areas; developed areas in natural settings; sensitive night environments; and rural areas. This zone is intended to be the default condition for rural areas within the City.
  - C. LZ 2. Low-density suburban neighborhoods and suburban commercial districts, industrial parks and districts. This zone is intended to be the default condition for the majority of the City.
  - D. LZ 3. Medium to high-density suburban neighborhoods and districts, major shopping and commercial districts **as depicted on the Lighting Overlay Zone Map.**
  - E. LZ 4. Reserved for limited applications with special lighting requirements. This zone is appropriate for users who have unique site or operating circumstances that warrant additional light. This zone shall not be applied to residential or agricultural areas.
- (.03) Modification of Lighting Zones.



- A. The City Council may modify the designated Lighting Zones of one or more parcels if the City Council finds that the original Lighting Zone was in error, a change in circumstances has occurred warranting the change since the designation was established or the purposes of this section are better served.
- B. The Development Review Board (DRB) may modify the designated Lighting Zones as part of the Stage II, Site Design Review Process if the DRB finds that the original Lighting Zone was in error, or a change in circumstances has occurred warranting the change since the designation was established or the purposes of this section are better served.
- C. This ordinance establishes a Lighting Overlay Zone Map. The Planning Division shall maintain the current Lighting Overlay Zone Map.

Section 4.199.40. Lighting Systems Standards for Approval.

(.01) Non-Residential Uses and Common Residential Areas.

- A. All outdoor lighting shall comply with either the Prescriptive Option or the Performance Option below.
- B. Prescriptive Option. If the lighting is to comply with this Prescriptive Option, the installed lighting shall meet all of the following requirements according to the designated Lighting Zone.
  - a. The maximum luminaire lamp wattage and shielding shall comply with Table 1.
  - b. The total lighting power for the site shall be less than or equal to the allowed lighting power. The allowed lighting power shall be determined according to Table 2.
  - c. The maximum pole or mounting height shall be consistent with Table 3.
  - d. Each luminaire shall be set back from all property lines at least 3 times the mounting height of the luminaire:
    - i. Exception 1: If the subject property abuts a property with the same base and lighting zone, no setback from the common lot lines is required.
    - ii. Exception 2: If the subject property abuts a property which is zoned (base and lighting) other than the subject parcel, the luminaire shall be setback three times the mounting height of the luminaire, measured from the abutting parcel's setback line. (Any variance or waiver to the abutting property's setback shall not be considered in the distance calculation).
    - iii. Exception 3: If the luminaire is used for the purpose of street, parking lot or public utility easement illumination and is located less than 3 mounting heights from the property line, the luminaire shall include a house side shield to protect adjoining property.
    - iv. Exception 4: If the subject property includes an exterior column, wall or abutment within 25 feet of the property line, a luminaire partly shielded or better and not exceeding 60 lamp watts may be mounted

onto the exterior column, wall or abutment or under or within an overhang or canopy attached thereto.

- v. Exception 5: Lighting adjacent to SROZ areas shall be set back 3 times the mounting height of the luminaire, or shall employ a house side shield to protect the natural resource area.

C. Performance Option. If the lighting is to comply with the Performance Option, the proposed lighting design shall be submitted by the applicant for approval by the City meeting all of the following:

- a. The weighted average percentage of direct uplight lumens shall be less than the allowed amount per Table 4.
- b. The maximum light level at any property line shall be less than the values in Table 4, as evidenced by a complete photometric analysis including horizontal illuminance of the site and vertical illuminance on the plane facing the site up to the mounting height of the luminaire mounted highest above grade. The Building Official or designee may accept a photometric test report, demonstration or sample, or other satisfactory confirmation that the luminaire meets the shielding requirements **of Table 1**.  
Luminaires shall not be mounted so as to permit aiming or use in any way other than the manner maintaining the shielding classification required herein:
  - i. Exception 1. If the property line abuts a public right-of-way, including a sidewalk or street, the analysis may be performed across the street at the adjacent property line to the right-of-way.
  - ii. Exception 2. If, in the opinion of the Building Official or designee, compliance is impractical due to unique site circumstances such as lot size or shape, topography, or size or shape of building, which are circumstances not typical of the general conditions of the surrounding area. The Building Official may impose conditions of approval to avoid light trespass to the maximum extent possible and minimize any additional negative impacts resulting to abutting and adjacent parcels, as well as public rights-of-way, based on best lighting practices and available lighting technology.
- c. The maximum pole or mounting height shall comply with Table 3.

D. Curfew. All prescriptive or performance based exterior lighting systems shall be controlled by automatic device(s) or system(s) that:

- a) Initiate operation at dusk and either extinguish lighting one hour after close or at the curfew times according to Table 5; or
- b) Reduce lighting intensity one hour after close or at the curfew time to not more than 50% of the requirements set forth in Table 2 unless waived by the DRB due to special circumstances; and
- c) Extinguish or reduce lighting consistent with a) and b) above on Holidays.

**The following are exceptions to curfew:**

- i. Exception 1: Building Code required lighting.
- ii. Exception 2: Lighting for pedestrian ramps, steps and stairs.
- iv. Exception 3: Businesses that operate continuously or periodically after curfew.

(.02) Special Permit for Specific Lighting Fixtures and Systems and When Exceeding Lighting Requirements.

- A. This section is intended to apply to situations where more than normal foot candles are required due to a unique circumstance or use or where it is absolutely essential to perform the proposed activities after dark. All special permits shall be reviewed by the DRB.
- B. Upon issuance of a special permit by the Development Review Board (DRB), lighting systems not complying with the technical requirements of this Ordinance may be installed, maintained, and replaced for lighting that exceeds the maximums permitted by this Ordinance. This section is intended to be applied to uses such as sports lighting systems including but not limited to, sport fields and stadiums, such as baseball and football field lighting, tennis court lighting, swimming pool area lighting and prisons; other very intense lighting defined as having a light source exceeding 200,000 lumens or an intensity in any direction of more than 2,000,000 candelas; building façade lighting of portions of buildings over two stories high; and public monuments.
- C. To obtain such a permit, applicants shall demonstrate that the proposed lighting installation:
  1. Is within Lighting Zone 3 or above.
  2. Has been designed to minimize obtrusive light and artificial sky glow, supported by a signed statement from a registered civil or electrical engineer describing the mitigation measures. Such statement shall be accompanied by calculations indicating the light trespass levels (horizontal and vertical at ground level) at the property line.
  3. Will not create excessive glare, sky glow, or light trespass beyond that which can be reasonably expected by application of best lighting practices, and available technology.
  4. Provides appropriate lighting curfew hours based on the use and the surrounding areas.
- D. The DRB may impose conditions of approval to mitigate any negative impacts resulting to the abutting parcel, based on best lighting practices and available lighting technology.
- E. The City may charge a review fee and may, at the Building Official's option, employ the services of a qualified professional civil or electrical engineer to review such submittals and the cost thereof shall be an additional fee charged to the applicant.

Section 4.199.50. Submittal Requirements.

- (.01) Applicants shall submit the following information as part of DRB review or administrative review of new commercial, industrial, multi-family or public **facility** projects:
- A. A statement regarding which of the lighting methods will be utilized, prescriptive or performance, and a map depicting the lighting zone(s) for the property.
  - B. A site lighting plan that clearly indicates intended lighting by type and location. For adjustable luminaires, the aiming angles or coordinates shall be shown.
  - C. **For each luminaire type, drawings, cut sheets** or other documents containing specifications for the intended lighting including but not limited to, luminaire description, mounting, mounting height, lamp type and manufacturer, lamp watts, ballast, optical system/distribution, and accessories such as shields.
  - ~~D. For each luminaire type, a manufacturer's cut sheet matching the specifications above.~~
  - ~~E.D.~~ Calculations of allowed lighting power and actual lighting power demonstrating compliance with power limits. ~~Such calculations shall indicate the Lighting Zone.~~
  - ~~F.E.~~ Lighting plans shall be coordinated with landscaping plans so that pole lights and trees are not placed in conflict with one another. The location of lights shall be shown on the landscape plan. Generally, pole lights should not be placed within one pole length of landscape and parking lot trees.
  - G.F. Applicants shall identify the hours of lighting curfew.
  - ~~H. All lighting plans shall be prepared by a qualified licensed engineer.~~
- (.02) **In addition to the above submittal requirements**, Applicants using the Prescriptive Method shall submit the following information as part of the permit set plan review:
- A. A site lighting plan (items 1 A-G F, above) which indicates for each luminaire the 3 mounting height line to demonstrate compliance with the setback requirements. For luminaires mounted within 3 mounting heights of the property line the compliance exception or special shielding requirements shall be clearly indicated.
- (.03) **In addition to the above submittal requirements**, Applicants using the Performance Method shall submit the following information as part of the permit set plan review:
- A. Site plan showing horizontal isocandle lines, or the output of a point-by-point computer calculation of the horizontal illumination of the site, showing property lines and light levels immediately off of the subject property.
  - B. For each side of the property, the output of a point-by-point vertical footcandle calculation showing illumination in the vertical plane at the property line from grade to at least 10 feet higher than the height of the tallest pole.
  - C. **Lighting plans shall be prepared by a qualified licensed engineer.**

(.04) **In addition to the above applicable submittal requirements**, Applicants for Special Permits shall submit ~~all of the applicable items above~~ and the following to the DRB for review:

B. Tabulation of International Engineering Society of North America (IESNA) lighting recommendations for each task including area illuminated, recommended illumination level, actual maintained illumination level, and luminaires used specifically to achieve the indicated criteria.

**B. Lighting plans shall be prepared by a qualified licensed engineer.**

(.05) For all calculations, the following light loss factors shall be used unless an alternative is specifically approved by the City:

Metal halide	0.6
High pressure sodium	0.8
Compact fluorescent	0.7
Full size fluorescent	0.75
Incandescent	0.9
Halogen	0.95
Other	As approved

Section 4.199.60. Major Additions or Modifications to Pre-Existing Sites.

(01.) Major Additions. If a major addition occurs on a property, all of the luminaires on the site shall comply with the requirements of this Section. For purposes of this subsection, the following are considered to be major additions:

A. Additions of 50 percent or more in terms of additional dwelling units, gross floor area, seating capacity, or parking spaces, either with a single addition or with cumulative additions after [effective date of this Ordinance].

B. Modification or replacement of 50 percent or more of the outdoor lighting luminaries' within a 5-year timeframe existing as of [effective date of this Ordinance].

<b>Table 1: Maximum Wattage And Required Shielding</b>				
<b>Lighting Zone</b>	<b>Fully Shielded</b>	<b>Shielded</b>	<b>Partly Shielded</b>	<b>Unshielded</b>
LZ 0	55	None permitted	None permitted	None permitted
LZ 1	70	20	13	Low voltage landscape lighting 50 watts or less
LZ 2	100	35	39	Low voltage landscape lighting 50 watts or less
LZ 3	250	100	70	Landscape and facade lighting 100 watts or less; ornamental lighting on private streets of 39 watts and less
LZ 4	450	150	150	Landscape and facade lighting 250 watts or less; ornamental lights on private streets and lanterns 70 watts or less; marquee lighting not employing medium based lamps

**Table 2: Allowed Lighting Power Density**

(watts per square foot (w/ft<sup>2</sup>) unless otherwise noted)

Determine the allowed lighting power for each application by multiplying the area in plan by the allowed lighting power density for the application. Only one lighting power allowance can be claimed for an **allowed** area. The actual lighting power must be equal to or less than the sum of the allowed lighting power for all applications.

Lighting Application	Allowed Area	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Hardscape	Paved area plus 5 feet of the perimeter of adjacent unpaved land. Includes planters and landscaped areas less than 10 feet wide that are enclosed by hardscape on at least three sides	0.03	0.05	0.07	0.09	0.20
Building entrances*	Per Door (stated values are watts, not watts per square foot).	13	18	26	32	70
Building entry, drive-up sales, and general use canopies	Drip line area under canopy.	Not allowed	0.10	0.20	0.40	0.70
Vehicle Service Station Canopy	Drip line area under canopy	Not allowed	0.30	0.60	1.20	2.40
Outdoor Sales, Service or Industrial Lot	Portion of uncovered hardscape used exclusively for display of vehicles or other merchandise for sale, for the service of vehicles, aircraft or watercraft, or for exterior manufacturing.	Not allowed	0.25	0.45	0.90	1.80
Ornamental Lighting	Entire site	Not allowed	Not allowed	0.010	0.020	0.04
<b>Building Facade</b>	<b>Square foot of illuminated facade</b>	<b>0.00</b>	<b>0.00</b>	<b>0.18</b>	<b>0.35</b>	<b>0.50</b>
Landscape Lighting	Landscaped area	Exempt	Exempt	Exempt	Exempt	Exempt
ATM Security Lighting	Within 5 feet of ATM facility	Exempt	Exempt	Exempt	Exempt	Exempt
Flagpole lighting	Illuminating flags on flagpole	Exempt	Exempt	Exempt	Exempt	Exempt

\*In addition to area lighting, an additional allowance per door is permitted.

**Table 3: Maximum Lighting Mounting Height In Feet**

Lighting Zone	Lighting for private roads, driveways, parking, bus stops and other transit facilities	Lighting for walkways, bikeways, plazas and other pedestrian areas	All other lighting
LZ 0	20	8	4
LZ 1	25	12	4
LZ 2	40	18	8
LZ 3	40	18	16
LZ 4	Height limit to be determined by Special Use Permit Only		

*Lighting mounted onto buildings or other structures shall not exceed a mounting height greater than 4 feet higher than the tallest part of the building or structure at the place where the lighting is installed, nor higher than 33.33 percent of the horizontal distance of the light from the nearest property line, whichever is less.*

**Table 4: Performance Method**

Lighting Zone	Maximum percentage of direct uplight lumens	Maximum Light Level at Property Line	
		Horizontal plane at grade (foot candles - fc)	Vertical plane facing the site in question, from grade to mounting height of highest mounted luminaire (foot candles - fc)
LZ 0	0	0.01 fc	0.02 fc
LZ 1	1%	0.05 fc	0.1 fc
LZ 2	5%	0.2 fc	0.4 fc
LZ 3	10%	0.4 fc	0.8 fc
LZ 4	20%	0.8 fc	1.6 fc



Table 5: Curfew	
Lighting Zone	Curfew Time
LZ 0	8:00 PM (2000 hours)
LZ 1	
LZ 2	10:00 PM (2200 hours)
LZ 3	Midnight (2400 hours)
LZ 4	