

**ORDINANCE NO. 2109**

AN ORDINANCE OF THE CITY OF REDMOND WASHINGTON, AMENDING REDMOND MUNICIPAL CODE AND REDMOND COMMUNITY DEVELOPMENT GUIDE CHAPTER 20D.90 TO ADOPT NEW EXTERIOR LIGHTING STANDARDS, AND ESTABLISHING AN EFFECTIVE DATE.

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WHEREAS, Redmond Comprehensive Plan Policy NE-90 calls for night lighting to be designed and constructed to minimize excessive glare and not to spill over onto nearby properties; and

WHEREAS, Redmond Comprehensive Plan Policy NE-91 calls for development regulations, design standards and development review that encourages dark night skies in Redmond; and

WHEREAS, the Planning Commission held a public hearing on this proposed ordinance and recommends that it be adopted; and

WHEREAS, the City Council of the City of Redmond desires to encourage good exterior lighting design, protect the city's dark night skies, maintain public enjoyment of the nighttime environment and acknowledges that this ordinance is for the benefit of the public health, safety, and welfare, NOW, THEREFORE,

THE CITY COUNCIL OF THE CITY OF REDMOND, WASHINGTON DO ORDAIN AS FOLLOWS:

**Section 1.** Chapter 20D.90, *Lighting*, of the Redmond Municipal Code and Redmond

Community Development Guide is hereby amended to read as follows

## **20D.90 Exterior Lighting Standards**

### **20D. 90. 10 Exterior Lighting Standards**

20D. 90. 10-010 Purpose

20D. 90. 10-020 Applicability

20D. 90. 10-030 General Requirements

20D. 90. 10-040 Commercial Lighting Standards within 50 feet of Residential Zones

20D. 90. 10-050 Open-Parking Lot Lighting

20D. 90. 10-060 Exterior and Parking Lot Lighting in Transition Overlays

20D. 90. 10-070 Lighting of Service Station and Associated Uses

20D. 90. 10-080 Lighting of Outdoor Performance, Sport & Recreation Facilities

20D. 90. 10-090 Security Lighting

20D. 90. 10-100 Architectural Accent Lighting

20D. 90. 10-110 Lighting of Landscaping

20D. 90. 10-120 Temporary Lighting

### **20D.90.10 Exterior Lighting Standards**

**Section 2.** Section 20D.90.10-010, *Purpose*, is hereby adopted as part of the Redmond Municipal Code and Redmond Community Development Guide to read as follows:

#### **20D.90.10-010 Purpose**

This division is established for the following purposes;

- (1) To regulate exterior lighting in order to avoid unsafe and unpleasant conditions as the result of poorly designed or installed exterior lighting.
- (2) To implement the light and energy conservation policies of the Comprehensive Plan.
- (3) To discourage excessive lighting.
- (4) To regulate the type of light fixtures, lamps and standards.
- (5) To protect low and low moderate density residential zones from the ill affects associated with non-residential and multi-family exterior lighting.

- (6) To create a safe environment during hours of darkness.
- (7) To avoid excessive lighting in order to promote the City's dark night sky policies.

**Section 3.** Section 20D.90.10-020, *Applicability*, is hereby adopted as part of the Redmond Municipal Code and Redmond Community Development Guide to read as follows.

**20D.90.10-020    Applicability**

- (1) When an exterior lighting installation is part of a new development proposal requiring Site Plan Review, a General Development Permit or a Special Development Permit, the Technical Committee shall review and approve the lighting design as part of the permitting process.
- (2) The Technical Committee shall review and approve the lighting design as part of the permitting processing for projects undergoing redevelopment or expansion when the redevelopment increases the gross floor area or valuation by the criteria established in 20F.10.60(10)(a) and 20F.10.60(10)(a)(i) of these regulations.
- (3) These regulations do not apply to individual dwelling units, with the exception of common areas, which are regulated. Examples of common areas include, but are not limited to pathways, clubhouses, shared driveways, parking lots and play areas.
4. These regulations do not apply to Public Right of Way and shall not conflict with City Street Light standards and design criteria.
- (5) These regulations do not apply to lighting necessary for emergency equipment and work conducted in the interests of law enforcement or for the safety, health, or welfare of the community.
- (6) The regulation of sign lighting is governed by Chapter 20D.160.

**Section 4.** Section 20D.90.10-030, *General Requirements*, is hereby adopted as part of the Redmond Municipal Code and Redmond Community Development Guide to read as follows:

**20D.90.10-030    General Requirements**

- (1) Site lighting trespass onto adjacent residential zones shall be minimized.
- (2) Site lighting shall minimize light spill into the dark night sky.
- (3) Where practical, exterior lighting installations shall include timers, dimmers, sensors, or photocell controllers that turn the lights off during daylight hours or hours when lighting is not needed, to reduce overall energy consumption and eliminate unneeded lighting.
- (4) Exterior lighting installations shall be designed to avoid harsh contrasts in lighting levels.
- (5) Fixtures and lighting systems used for safety and security shall be in good working order and shall be

maintained in a manner that serves the original design intent of the system.

(6) Vegetation and landscaping shall be maintained in a manner that does not obstruct security lighting and minimizes possible entrapment spaces.

(7) The applicant shall submit to the Technical Committee sufficient information, in the form of an overall exterior lighting plan, to enable the Technical Committee to determine that the applicable provisions will be satisfied. The exterior lighting plan shall include at least the following:

- (a) Manufacturer specification sheets, cut-sheets or other manufacturer provided information for all proposed lighting fixtures.
- (b) The proposed location, mounting height, and aiming point of all exterior lighting fixtures.
- (c) If building elevations are proposed for illumination, drawings shall be provided for all relevant building elevations showing the fixtures, the portions of the elevations to be illuminated, the illuminance levels of the elevations, and the aiming point for any remote light fixture.
- (d) If needed to review proposed exterior lighting installations, the Technical Committee may request additional information following the initial lighting plan submittal, such as;
  - (1) A brief written narrative, with accompanying plan or sketch, which demonstrates the objectives of the lighting.
  - (2) Photometric data, Color Rendering Index (CRI) of all lamps (bulbs), and other descriptive information on the fixtures, and if applicable or required, designation as Illuminating Engineering Society of North America (IESNA) "cut-off" fixtures.
  - (3) Computer generated photometric grid showing footcandle readings every 10 feet within the property or site, and 10 feet beyond the property lines at a scale specified by the Administrator. Iso-footcandle contour line style plans are also acceptable.
  - (4) Landscaping information that indicates mature tree size, shrubbery and other vegetation in order to evaluate the long-term and seasonal effectiveness of lighting or screening of lighting.

**Section 5.** Section 20D.90.10-040, *Lighting Standards for Uses within 50 feet of*

*Residential Zones*, is hereby adopted as part of the Redmond Municipal Code and Redmond

Redmond Community Development Guide to read as follows:

**20D.90.10-040**                      **Lighting Standards for Uses within 50 feet of Residential Zones**

- (1) For exterior lighting installations and fixtures within 50 feet of low and low-moderate density residential zones (densities less than or equal to R-6), the following requirements shall apply:
  - a. Lighting fixtures shall be no higher than 15 feet above grade.
  - b. Lighting fixtures shall be aimed and shielded in a manner that shall not direct illumination on adjacent residential zones. Fixtures should be of a type or adequately shielded so as to prevent glare from normal viewing angles.
  - c. Where feasible, additional landscaping may be required by the Technical Committee to provide light

screening between commercial zones and residential zones to help prevent light trespass. Where landscaping is used for light screening, the Technical Committee shall take into consideration the applicable landscaping standards found elsewhere in these regulations, the design standards found elsewhere in these regulations, the creation of excessive shadows or dark spaces, and views into and out of a site.

(2) The height restrictions of this section [item 1(a) above] shall not apply to lighting used to illuminate outdoor performance areas, sport and recreation facilities, and playfields, except where such lighting fixtures are located within 50 feet of the property line of a low and low-moderate density residential use or vacant residential lot (densities less than or equal to R-6). Lighting of outdoor performance areas, sport and recreation facilities, and playfields shall also meet the standards in section 20D.90.10-080.

**Section 6.** Section 20D.90.10-050, *Open-Air Parking Lot Lighting*, is hereby adopted as part of the Redmond Municipal Code and Redmond Community Development Guide to read as follows:

**20D.90.10-050                      Open-Air Parking Lot Lighting**

- (1) Open-air parking lots shall comply with the standards of this section in addition to the other requirements of this division.
- (2) For multilevel parking facilities, the roof level shall be considered an open-air parking lot.
- (3) Open-air parking lot lighting shall be designed to provide adequate vision, comfort and safety.
- (4) Open-air parking lot lighting shall be designed to provide for uniform lighting throughout the facility with no dark patches or pockets.
- (5) Open-air parking lot lighting shall be designed to provide a minimum value of lighting necessary for the safety and identification of features.
- (6) Open-air parking lot lighting shall not cause direct illumination on adjacent and nearby properties or streets. Fixtures should be of a type or adequately shielded so as to prevent glare from normal viewing angles.
- (7) In order to direct light downward and minimize the amount of light spilled into the dark night sky, all lighting fixtures serving open-air parking lots, except as allowed in subsection (8) below, shall be full cut-off fixtures as defined by the Illuminating Engineering Society of North America (IESNA).
- (8) If the design of an area suggests the use of parking lot lighting fixtures of a particular "period" or architectural style, the Technical Committee may permit alternatives or supplements to the lighting described above. In order to minimize the amount of light spilled into the dark night sky the following shall apply:
  - a. Mounting heights of such alternative fixtures shall not exceed 15 feet above grade or pavement.
  - (b) The Technical Committee shall require reasonable measures to minimize light trespass and light spill into the dark night sky.
- (9) The following mounting height regulations shall apply to open-air parking lot lighting fixtures. Mounting height shall be measured as the vertical distance between the parking surface and the bottom of the lighting fixture.

- (a) The maximum permissible mounting height of open-air parking lot lighting fixtures within 50 feet of low and low-moderate density residential zones (densities less than or equal to R-6) shall be 15 feet.
- b. The maximum permissible mounting height for open-air parking lot lighting fixtures, on top levels of structures, shall be 15 feet.
- (c) The maximum permissible mounting height of open-air parking lot lighting fixtures, not listed in (a) and (b) above, shall be 25 feet.

(10)The Technical Committee may allow increases from Basic to Enhanced Security lighting levels (see table below), when personal security is an issue, such as where the parking facility is used during all hours of the day and night, where special security needs exist, or where vandalism or crime are possible. The Technical Committee may consider specific site characteristics, level of vehicle and pedestrian conflict, special security needs, and history or likelihood of crimes in making its determination.

(11)The table below establishes open-air parking lot lighting standards.

	<b>Basic<sup>1</sup></b>	<b>Enhanced Security<sup>2</sup></b>
<b>Minimum Footcandles on Pavement<sup>3</sup></b>	0.2 fc	0.5 fc
<b>Maximum Footcandles on Pavement</b>	4.0 fc	7.5 fc
<b>Uniformity Ratio Maximum:Minimum<sup>4</sup></b>	20:1	15:1
<b>Minimum Footcandles at five (5) feet Above Pavement<sup>5</sup></b>	0.1 fc	0.25 fc

Notes:

fc = footcandle

<sup>1</sup>For typical conditions. During periods of non-use, the illuminance of certain parking facilities should be turned off or reduced to conserve energy. If reduced lighting is to be used only for the purpose of property security, it is desirable that the minimum (low point) value not be less than 0.1 footcandle. Reductions should not be applied to facilities subject to intermittent night use, such as at apartments, hospitals and transportation terminals.

<sup>2</sup>The Technical Committee may allow increases from Basic to Enhanced Security lighting levels, when personal security is an issue, such as where the parking facility is used during all hours of the day and night, where special security needs exist, or where vandalism or crime are possible. The Technical Committee may consider specific site characteristics, level of vehicle and pedestrian conflict, special security needs, and history or likelihood of crimes in making its determination.

<sup>3</sup>Measured on the parking surface, without any shadowing effect from parked vehicles or trees at points of measurement.

<sup>4</sup>The highest horizontal illuminance point at grade, divided by the lowest horizontal illuminance point or area should not be greater than the values shown.

<sup>5</sup>Measured at 1.5 meters (5.0 feet) above parking surface at the point of the lowest horizontal illuminance, excluding facing outward along boundaries.

**Section 7.** Division 20D.90.10, *Exterior Parking Lot Lighting in Transition Overlays,*

is hereby amended as part of the Redmond Municipal Code and Redmond Community Development Guide to read as follows:

**20D.90.10-060 Exterior and Parking Lot Lighting in Transition Overlays.**

- (1) See RCDG 20D.230.20-020, When Compliance with Transitional Regulations is Required, for the location of Transition Overlays and the identification of protected and complying zones.
- (2) Within Transition Overlays, exterior lighting shall be designed, located, constructed, and maintained to minimize light and reflected light trespass into protected zones.
- (3) Within Transition Overlays, interior parking structure lighting shall be designed, located, constructed, and maintained so that light and reflected light does not spill over or intrude into protected zones. The structure shall be designed and constructed so that light from cars within the structure does not spill over or intrude into protected zones. (Ord. 2027).

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**Section 8.** Section 20D.90.10-070, *Canopy Lighting and Lighting of Service Stations,*

is hereby adopted as part of the Redmond Municipal Code and Redmond Community Development Guide to read as follows:

**20D.90.10-070 Canopy Lighting and Lighting of Service Stations**

- (1) Lighting of such areas shall not be used to attract attention to the business. Signs allowed under the appropriate section of these regulations shall be used for that purpose.
- (2) Lighting levels shall be adequate to facilitate the activities taking place in such locations.
- (3) In order to minimize the extent of direct glare, light fixtures mounted on canopies shall be recessed so that the lens cover is recessed or flush with the bottom surface (ceiling) of the canopy or shielded by the fixture or the edge of the canopy so that light is restrained to 85 degrees or less from vertical. The figure below, entitled Recessed Fixture, illustrates this.

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**20D.90.10-080 Lighting of Outdoor Performance, Sport & Recreation Facilities & Playfields**

- (1) Lighting levels for outdoor performance areas, sport and recreation facilities, and playfields shall not exceed by more than five (5) percent the Illuminating Engineering Society of North America (IESNA) published standards for the proposed activity.
- (2) Where playing fields or other special activity areas are to be illuminated, lighting fixtures shall be mounted, aimed and shielded so that their beams fall within the primary playing area and immediate surroundings, and so that no direct illumination is directed off the site.
- (3) The main lighting shall be turned off as soon as possible following the end of the event. The main lighting shall not remain on longer than thirty (30) minutes following the end of the event. Where feasible, a low level lighting system shall be used to facilitate patrons leaving the facility, cleanup, nighttime maintenance and other closing activities. The low level lighting system shall provide an average horizontal illumination level at grade of no more than 3.0 footcandles, with a uniformity ratio (average illumination to minimum illumination) not exceeding 4:1.

**Section 10.** Section 20D.90.10-090, *Security Lighting*, is hereby adopted as part of the

Redmond Municipal Code and Redmond Community Development Guide to read as follows:

**20D.90.10-090 Security Lighting**

- (1) Security Lighting is defined as lighting designed and used to discourage crime and undesirable activity.
- (2) Security Lighting should use the lowest possible illumination to effectively allow surveillance.
- (3) The use of sensor technologies, timers or other means to activate lighting during times when it will be needed may be required by the Technical Committee to conserve energy, provide safety, and promote compatibility between different land uses.
- (4) In order to direct light downward and minimize the amount of light spill into the dark night sky, all security lighting fixtures shall be full cut-off fixtures as defined by the Illuminating Engineering Society of North America (IESNA).
- (5) Security lighting shall be shielded and aimed so that illumination is directed to the designated areas.
- (6) Where security lighting is proposed, the table below shall govern the range of permissible light levels for the listed applications. Where a proposed security lighting application is not identified in the table below, the table shall be used as a guide for establishing the range of permissible light levels.

<b>Security Lighting Application</b>	<b>Average Horizontal Illumination Level on Ground</b>
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Large Open Areas	0.5 – 2.0 fc <sup>1</sup>
Buildings	0.5 – 2.0 fc <sup>1</sup>
Perimeter Fence	0.5 fc <sup>2</sup>
Entrances	10 fc <sup>3</sup>
Gatehouses	30 fc <sup>4</sup>
Pedestrian Pathways and Access Routes	4 – 6 fc

Notes:

fc = footcandle

<sup>1</sup>The greater the brightness of the surrounding area, the higher the illuminance required to balance the brightness.

<sup>2</sup>Illuminance on the ground.

<sup>3</sup>Illuminance on the ground in the inspection area.

<sup>4</sup>Illuminance on the work-plane in the gatehouse. This lighting must be dimmable to low levels at night so the guard can see outside the gatehouse.

**Section 11.** Section 20D.90.10-100, *Architectural Accent Lighting*, is hereby adopted

as part of the Redmond Municipal Code and Redmond Community Development Guide to read as follows:

**20D.90.10-100 Architectural Accent Lighting**

- (1) Fixtures used to accent architectural features, materials, colors, style of buildings, or art shall be located, aimed and shielded so that light is directed only on those features. Such fixtures shall be aimed or shielded so as to minimize light spill into the dark night sky. The Technical Committee may allow exceptions to this provision if minimal light escapes into the dark night sky or onto adjacent properties.
- (2) Lighting fixtures shall not generate excessive light levels, cause glare, or direct light beyond the façade onto neighboring property, streets or the night sky.
- (3) The maximum illumination of any vertical surface or angular roof surface in dark surroundings shall not exceed three (3) footcandles.
- (4) The maximum illumination of any vertical surface or angular roof surface in light surroundings shall not exceed five (5) footcandles.
- (5) Flags of the United States or Washington State may be illuminated from below provided such lighting is focused primarily on the individual flag or flags so as to limit light trespass and spill into the dark night sky.

**Section 12.** Section 20D.90.10-110, *Lighting of Landscaping*, is hereby adopted

as part of the Redmond Municipal Code and Redmond Community Development Guide to read as follows:

**20D.90.10-110 Lighting of Landscaping**

1. Illumination of landscaping shall utilize diffused or muted lighting, avoid glare, and minimize light trespass and escape beyond landscaping onto neighboring property, streets, or the night sky.

**Section 13.** Section 20D.90.10-120, *Temporary Lighting*, is hereby adopted as part of

the Redmond Municipal Code and Redmond Community Development Guide to read as follows:

**20D.90.10-120 Temporary Lighting**

- (1) Lighting used to illuminate temporary uses shall be reviewed, and if necessary conditioned, through the Temporary Use Permitting Process.
- (2) The Technical Committee may impose specific conditions for the lighting of temporary uses consistent with the purposes of this title.

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**Section 14. Severability.** If any section, sentence, clause, or phrase of this ordinance

or any tax or law adopted or amended hereby should be held to be invalid or unconstitutional by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity or constitutionality of any other section, sentence, clause or phrase of this ordinance or any tax or law adopted by amended hereby.

**Section 15. Effective Date.** This ordinance, being an exercise of a power specifically delegated to the city legislative body, is not subject to referendum, and shall take effect five days after passage and publication of an approved summary thereof consisting of the title.

CITY OF REDMOND

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MAYOR ROSEMARIE IVES

ATTEST/AUTHENTICATED:

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CITY CLERK, BONNIE MATTSON

APPROVED AS TO FORM:

OFFICE OF THE CITY ATTORNEY:

By: \_\_\_\_\_

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FILED WITH THE CITY CLERK:

PASSED BY THE CITY COUNCIL:

SIGNED BY THE MAYOR:

PUBLISHED:

EFFECTIVE DATE:

ORDINANCE NO.: \_\_\_\_\_