



# OUTDOOR LIGHTING & STREETLIGHT DESIGN GUIDELINES





# OUTDOOR LIGHTING AND STREETLIGHTING DESIGN GUIDELINES

## TABLE OF CONTENTS

---

<b>Introduction, Objectives, and Compliance .....</b>	2
---	---

### **SECTION I – Building and Site Lighting**

♦ <b>Part One – General Guidelines .....</b>	3
♦ <b>Part Two – Specific Guidelines</b>	
o <b>A – Parking Lots and Traffic Areas (Excluding the Public Right of Way).....</b>	4
o <b>B – Parking Garages .....</b>	5
o <b>C – Service Stations, Automobile Dealerships, and Exterior Sales Areas.....</b>	7
o <b>D – Landscape, Hardscape, and Building Lighting .....</b>	8
o <b>E – Security Lighting.....</b>	9
o <b>F – Automated Teller Machines (ATMs).....</b>	10
o <b>G – Sign Lighting .....</b>	10
o <b>H – Sports and Recreation Lighting.....</b>	11

### **SECTION II – Streetlighting & Pedestrian Lighting in the Public Right-of-Way**

♦ <b>Part One – General Guidelines .....</b>	13
♦ <b>Part Two – Specific Guidelines</b>	
o <b>A – Streetlights .....</b>	13
o <b>B – Pedestrian Lighting .....</b>	14
o <b>C – El Pueblo Viejo (see Glossary definition).....</b>	15
o <b>D – Private Roads.....</b>	15

### **APPENDICES –**

<b>Appendix A – Exceptions to Guidelines .....</b>	16
<b>Appendix B – References to Other Ordinances, Guidelines, and Codes .....</b>	16
<b>Appendix C – Compliance Statement .....</b>	16
<b>Appendix D – Glossary of Lighting Terms and Streetlight Types .....</b>	17
<b>Appendix E – Comparison of Lamp Types and Lumen Outputs.....</b>	20
<b>Appendix F – Outdoor Lighting Ordinance from Santa Barbara Municipal Code .....</b>	22
<b>Appendix G – Plan Review Checklists for use by City Staff and Design Review Boards.....</b>	25
<b>Appendix H – <i>City Streetlight Map</i> (see Glossary)</b>	
An oversize document, available at the Public Works Department permit counter	
630 Garden Street	
Phone 805-564-5388	

## INTRODUCTION

(NOTE: Words in ***bold italics*** are defined in the Glossary.)

---

Santa Barbara possesses a rich architectural heritage and a uniquely beautiful scenic environment. At night, lighting is an integral component of this built and natural environment. It is important that illumination is intelligently planned to complement this setting, while providing a cohesive appearance for the City's residential and commercial neighborhoods, and to preserve the semi-rural character that exists in many areas.

Safety and security for persons and property are also of paramount concern, and it is necessary to recognize the importance of quality of light versus quantity. These guidelines are intended to promote high quality lighting, efficient use of energy, and to reduce negative aspects resulting from poor lighting design such as light pollution, glare, light trespass, and wasted energy through misdirected light.

The City of Santa Barbara recognizes that industry standards for recommended minimum light levels may not be compatible with or appropriate for the aesthetic standards of the City. Appropriate lighting should always consider the brightness of surrounding conditions. Less light, and therefore less energy, is required when there is a consistency between lighting installations. Lighting levels appropriate in larger urban areas are not compatible with Santa Barbara's ambience.

The "streetscapes" of Santa Barbara are an important contributing element, both during the day, when attractively designed streetlighting poles and fixtures are visible, and at night, when the quality of light creates an ambiance and provides safety for pedestrians, vehicles, and alternative modes of transportation. During the day, patterns and rhythms of streetlighting poles and fixtures are juxtaposed against the City's unique architectural landscape, and should not only be harmonious in their details and colors, but should also contribute to defining neighborhoods, scenic and circulation corridors, and historic districts.

The design policies and examples set forth in these Guidelines are not intended to discourage unique and inventive design solutions. Instead, they serve to assist the City's decision makers and staff, architects, lighting designers, and applicants with an understanding of concepts behind good lighting design and a means to achieve that goal by establishing parameters enabling reviewers to determine that the intent of the Ordinance and Guidelines has been met.

These Guidelines supplement, and should be used in conjunction with, the City's Outdoor Lighting Ordinance contained in Municipal Code Chapter 22.75 (see Appendix F), and the ***Public Works Construction Standard Details***. Other laws or ordinances may require minimum or maximum illumination levels for specific applications and may conflict with these Guidelines. In such cases, those laws or ordinances shall govern.

## OBJECTIVES

---

- ◆ To promote a high standard for quality of lighting in commercial and residential areas of the City, and to assure lighting installations are subtle, appropriate, and avoid over-lighting, glare, and light pollution.
- ◆ To acknowledge the objectives of the ***International Dark Sky Association*** and strive to preserve and restore view of the night sky.
- ◆ To assure maximum energy efficiency in new and replacement lighting installations, and to encourage the use of new technologies when they can be aesthetically integrated, including energy efficient light sources and solar energy.
- ◆ To recognize patterns defined by existing streetlighting types and to encourage recognition of opportunities in reviewing projects for implementation of this Guideline's goals.
- ◆ To promote efficiencies in specification of streetlighting installations through utilization of the ***Public Works Construction Standard Details*** for streetlight pole and fixture types, while achieving a desired variety to define areas through variations in poles, fixtures, and accessories.
- ◆ To expedite the approval process for streetlight installations where the City's ***Design Review Boards*** have established a designated design standard.

## COMPLIANCE

(NOTE: Words in ***bold italics*** are defined in the Glossary.)

To achieve “good lighting design” requires both technical expertise and artistic creativity. Lighting ordinances and guidelines can only succeed to a point in using technical metrics, or subjective descriptions of a desired look. It is anticipated that these Guidelines will be used by a variety of different users with a wide range of expertise in lighting design, and therefore employ a mix of technical requirements where necessary, as well as descriptive elements in order to guide the user toward a design that will be compatible with Santa Barbara’s unique character.

Ultimately, it is the responsibility of the applicant to become familiar with these Guidelines in order to understand the City’s objective for “good lighting design”. All plans submitted for review and approval for lighting covered under Section I – Building & Site Lighting, shall include a Compliance Statement per Appendix C.

### ***SECTION I – Building & Site Lighting***

These Guidelines apply to all outdoor lighting in the City of Santa Barbara, including new installations, expansions of existing installations, and renovations or replacements of existing installations. Routine maintenance, such as replacement of lamps and ballasts, does not constitute renovation or replacement provided such changes do not result in a higher light output, and lamps and ballasts are for the same source (lamp type) as originally approved. Projects in all land use zones for which review is required by the Architectural Board of Review, the Single Family Design Board, the Sign Committee, or the Historic Landmarks Commission, shall be reviewed for conformance with the City’s Lighting Ordinance and these Guidelines.

Plans submitted for review and approval shall provide information sufficient to demonstrate compliance with the requirements of these Guidelines, including plan and elevation drawings, manufacturers’ fixture cut-sheets, lamp type and wattage, the required Compliance Statement (Appendix C), and additional information that may be required under certain sections of these Guidelines, or as requested by City staff or the ***Design Review Board***, such as ***foot-candle plots*** or controls. Changes after approval are subject to the same review process.

### ***SECTION II – Streetlighting & Pedestrian Lighting in the Public Right-of-Way***

Plans submitted for review and approval shall include information sufficient to demonstrate compliance with the requirements of these Guidelines. Additional information may be required as requested by Public Works Department staff or the ***Design Review Board***, where applicable. Changes after approval are subject to the same review process.

## ***— SECTION I —***

### ***Building & Site Lighting***

(NOTE: Words in ***bold italics*** are defined in the Glossary.)

#### ***Part One - General Guidelines***

- ◆ Lighting fixtures should be appropriate to the style of architecture or aesthetically concealed from view. (See also Guidelines for ***El Pueblo Viejo District***.)
- ◆ Illumination levels should be appropriate to the type of use proposed, the architectural style of the structure, and the overall neighborhood.
- ◆ Lighting shall be designed to control ***glare***, minimize ***light trespass*** onto adjacent properties, minimize ***direct upward light emission***, promote effective security, and avoid interference with the safe operation of motor vehicles. The minimum intensity needed for the intended purpose should be used. This paragraph is not intended to preclude the use of decorative ***lantern*** fixtures with visible lamps, provided they meet other provisions of these guidelines.

## General Guidelines, Cont'd.

- ◆ Lighting of building facades should be considered for appropriateness, and is generally discouraged as it is not consistent with energy conservation goals and the ambiance of Santa Barbara.
- ◆ Blinking, moving, or changing intensity of illumination; illumination of roofs; and internal illumination of awnings are not allowed. Strings of small lights attached to buildings are not allowed except for temporary holiday installations between the last week of November and the first week of January of the following year.
- ◆ In the Hillside Design District, light fixtures for landscape, recreation, or building lighting should not emit undesirable light rays, either direct or reflected, into the night sky. Such lighting could create **skyglow**, which is inconsistent with rural residential areas.
- ◆ In all residential areas, illumination levels should be appropriate for residential uses. Lighting for commercial installations proximate to residential uses should be designed to be compatible with residential illumination levels.
- ◆ Lighting of signs shall be reviewed by the Sign Committee and shall be consistent with these guidelines.

## Part Two - Specific Guidelines

### A. Parking Lots and Traffic Areas (Excluding the Public Right of Way)

#### Goals:

- ◆ To provide cohesive and homogenous general illumination for parking lots and traffic areas that is similar to the warm color quality of **incandescent** lighting.
- ◆ To provide adequate light levels for safety and uniformity, but avoid **glare** and overlighting. **Design Review Boards** may approve higher light levels than stated below, where necessary in limited areas for additional safety and security.
- ◆ To promote the use of **full cut-off** type fixtures for area lighting and limit the use of decorative **lanterns** to lower level accent lighting.
- ◆ To maximize opportunities for energy conservation, while avoiding **glare** and **light trespass**, in design of lighting installations through selection of fixture type, lighting technology and location, and control of light levels.
- ◆ To integrate design of lighting installations with adjacent architecture and landscape.
- ◆ To meet or exceed the currently adopted **Title 24 Lighting Standards**.

#### Guidelines:

1. Lighting technologies currently recognized as meeting these guidelines are **High Pressure Sodium (HPS)**. The use of Deluxe **HPS** lamps is encouraged to provide high color rendering ability. **Metal Halide (MH)** lighting is discouraged. Other types such as **Light Emitting Diode (LED)** and **Induction Lighting** may be acceptable if it can be demonstrated that they can provide a warm color quality.
2. Lamps in **cut-off fixtures** should be a maximum of 400 watts. Horizontal lamp mounting and flat glass lenses are preferred. "Sag" or "drop" lenses result in excessive glare and are not acceptable. Additional **shielding** of fixtures shall be required as determined by the **Design Review Board** to avoid **light trespass** and **glare** viewed from adjacent properties and streets.
3. Lamps in **lantern** type fixtures where the lamp is not **shielded** should not exceed a maximum of 3800 **lumens** per fixture. Additional means may be required to minimize **glare**, such as the use of refractors, louvers, or patterned or translucent glass to obscure view of the lamp. (See Appendix E, Comparison of Lamp Types and Lumen Outputs)

## Parking Lots and Traffic Areas, Cont'd.

4. Fixtures with an adjustable aiming angle present potential for skylight and light trespass problems, and are generally not allowed.
5. Fixtures should be in scale with proposed pole height. Building elevations with poles and fixtures superimposed shall be provided for review. Lighting fixtures and poles should be appropriate to the style of architecture.
6. Total pole and fixture height should be a maximum of 20 feet, measured from grade at the base. Poles, concrete bases, and fixtures should be appropriate in scale for the buildings and lot. Less height, closer spacing, and lower wattage may be required. Taller poles may be considered in some situations, but should not conflict with tree canopies.
7. Pole lighting fixtures shall be shown on landscape plans to demonstrate coordination of fixtures and tree planting.
8. Lighting installations shall be equipped with controls as required by **Title 24 Lighting Standards**. Plans submitted shall specify the proposed off-time. This requirement shall include a provision for reduced light levels or reduced number of fixtures for after-hours security.
9. Average horizontal illuminance should target 1 foot-candle, measured at ground level, but should in no case exceed 1.5 foot-candles. **Design Review Boards** may approve higher light levels where necessary in limited areas for additional safety and security.
10. The uniformity ratio between maximum and minimum illuminance should not exceed 5:1. In general, 400 watt **HPS** lamps should not be mounted lower than 16 feet above ground, nor should 250 watt **HPS** lamps be lower than 12 feet.
11. It is important that lighting installations meet both the requirement for average horizontal illuminance, as well as the requirement for uniformity ratio.

**Note:** *The following additional requirements apply to all new installations. These requirements also apply to expansions, replacements, or renovations of existing projects, unless deemed by City Staff and Design Review Board to be minor in nature.*

12. Provide a **foot-candle plot** on a site plan showing illuminance to 20 feet beyond property line. Show minimum, average, and maximum foot-candles and the uniformity ratio. Where adjacent to residential uses, illuminance should not exceed 0.1 (1/10) foot-candle at 10 feet beyond property line. Where adjacent to commercial uses, illuminance should not exceed 0.2 (2/10) foot-candle at 10 feet beyond property line.
13. The above calculations for minimum, average, and maximum foot-candles and uniformity ratio shall be based on a statistical area that does not include points beyond property line or more than 1.5 pole heights measured horizontally from the base of pole. Include all points within the pole field.

**NOTE:** Where the proposed lighting cannot be adequately represented by a point-by-point foot-candle plot, such as due to topographic features or the presence of existing buildings, City Staff or the Design Review Board may require a computer-rendered 3D lighting model.

## B. Parking Garages

### Goals:

- ♦ To effect a safe and visually subtle transition from garage entrances and interiors to ambient daylight by day and to streetlighting and pedestrian lighting in the public right-of-way by night.
- ♦ To provide adequate light levels for safety and uniformity, but avoid overlighting and view of illumination sources from the public right-of-way. **Design Review Boards** may approve higher light levels than stated below, where necessary in limited areas for additional safety and security.

## Parking Garages, Cont'd.

- ◆ To maximize opportunities for energy conservation through selection of fixture type, lighting technology and location, and control of light levels.
- ◆ To meet or exceed the currently adopted **Title 24 Lighting Standards**.

### Guidelines:

- 1.** Lighting technologies currently recognized as meeting these guidelines are **High Pressure Sodium (HPS)** and **Fluorescent**. The use of Deluxe **HPS** lamps is encouraged to provide high color rendering ability. **Metal Halide (MH)** lighting is discouraged, and is not allowed in the transition zone. Other types such as **Light Emitting Diode (LED)** and **Induction Lighting** may be acceptable if it can be demonstrated that they can provide a warm color quality.
- 2.** The transition zone is the area that occurs at vehicle and pedestrian entrances and exits, between the ambient daylight or streetlighting and garage interior lighting, extending 60 feet into the building from the exterior face. Illuminances greater than the interior lighting may be needed during the day for the transition from full daylight to the relatively low interior illuminances. Illuminances less than the interior lighting may be needed during the night for the transition from lower streetlighting levels to the relatively bright interior illuminances. Lighting installations shall be equipped with controls as required by **Title 24 Lighting Standards** and as required to provide for daytime and nighttime illumination levels.
- 3.** Brightness of the garage interior as viewed from vehicle entrances and exits is inconsistent with the ambient lighting of the City and must be carefully considered. Directed task lighting is preferred over higher general illumination. Lighting should reflect the color and intensity characteristics of streetlighting and site lighting, and glare resulting from direct view of illumination sources must be avoided.
- 4.** Where the interior of the garage at grade level or higher is visible from outside the building, either through vehicle entrances and exits or other openings in the building walls, **glare** resulting from direct view of illumination sources must be minimized by careful placement and/or **shielding** of fixtures.
- 5.** Pole-top fixtures, where installed on the roof parking level, shall be **full cut-off** fixtures. Considerations for appropriate design include minimizing pole height, and avoiding placement of poles at the perimeter of the building. **Metal Halide** lighting is not acceptable for roof level pole-top fixtures.
- 6.** Where **Metal Halide** lighting is used in the garage interior, the walls, if painted, should be of a color that will help to warm the reflected light.
- 7.** Where **HID** lighting is used, **Cut-off** fixtures with horizontal lamp mounting and flat glass lenses are preferred. "Sag" or "drop" lenses result in excessive glare and are not acceptable.
- 8.** Where not otherwise required by **Title 24**, additional lighting controls for garage interior lighting are encouraged for energy conservation to provide reduced illumination levels when appropriate.
- 9.** Average horizontal illuminance should target 1 foot-candle, measured at ground level, but should in no case exceed 1.5 foot-candles. **Design Review Boards** may approve higher light levels where necessary in limited areas for additional safety and security.
- 10.** Provide a **foot-candle plot** showing illuminance at the transition zones and to the furthest floor area visible from the vehicle entrance or exit. Show minimum, average, and maximum foot-candles and the uniformity ratio. Illuminance should not exceed the ambient streetlighting level at 10' feet beyond the vehicle entrance or exit.
- 11.** Plans submitted for review shall show sufficient plan, detail, section, and finish information for staff and the **Design Review Board** to determine that the above guidelines have been met.

## C. Service Stations, Automobile Dealerships, and Exterior Sales Areas

### Goals:

- ◆ To meet or exceed the currently adopted **Title 24 Lighting Standards**.
- ◆ To harmonize with adjacent businesses and avoid use of lighting as a means of competition.
- ◆ To promote the use of **full cut-off** type fixtures for area lighting and limit the use of decorative **lanterns** to lower level accent lighting.
- ◆ To maximize opportunities for energy conservation, while avoiding **glare** and **light trespass**, in design of lighting installations through selection of fixture type, lighting technology and location, and control of light levels.
- ◆ To integrate design of lighting installations with adjacent architecture and landscape.

### Guidelines:

1. Lighting technologies currently recognized as meeting these guidelines are **High Pressure Sodium (HPS)**, **Metal Halide (MH)**, and **Fluorescent**. New technologies including **Light Emitting Diode (LED)** and **Induction Lighting** may be considered.
2. Lamps in **cut-off fixtures** should be a maximum of 400 watts. Horizontal lamp mounting and flat glass lens are preferred over vertical lamp mounting. "Sag" or "drop" lenses result in excessive **glare** and are not acceptable. Additional **shielding** of fixtures shall be required as determined by the **Design Review Board** to avoid **light trespass** and **glare** viewed from adjacent properties and streets.
3. Lamps in **lantern** type fixtures where the lamp is not **shielded** should not exceed a maximum of 3800 **lumens** per fixture. Except for low-wattage lamps, additional means may be required to minimize **glare**, such as the use of refractors, louvers, or patterned or translucent glass to obscure view of the lamp. (See Appendix E, Comparison of Lamp Types and Lumen Outputs)
4. Fixtures with an adjustable aiming angle present potential for **glare**, **skyglow** and **light trespass** problems, and are generally not allowed.
5. Fixtures should be in scale with proposed pole height. Provide an elevation of the building with poles and fixtures superimposed for review. Lighting fixtures and poles should be appropriate to the style of architecture.
6. Total pole and fixture height should be a maximum of 20 feet, measured from grade at base. Poles, concrete bases, and fixtures should be appropriate in scale for the buildings and lot. Less height, closer spacing and lower wattage may be required. Taller poles may be considered in some situations, but should not conflict with tree canopies.
7. Pole lighting fixtures shall also be shown on landscape plans to demonstrate coordination of fixtures and tree planting.
8. Lighting installations shall be equipped with controls as required by **Title 24 Lighting Standards**. Plans submitted shall specify the proposed off-time. This requirement shall include a provision for reduced light levels or reduced number of fixtures for after-hours security.
9. Fixtures mounted in service station canopies should be fully recessed, where feasible, and with flush or recessed diffusers. Where the underside of a canopy is sloping, fixtures should be adjustable or of a type to permit aiming straight down. All fixtures shall be designed to control **glare**. "Sag" or "drop" lenses result in excessive **glare** and are not acceptable.
10. For service station canopies, illuminance should not exceed 40 foot-candles average, with a maximum of 60 foot-candles measured at ground level.
11. For automobile sales areas in the area of Calle Real, Hope Avenue, and Hitchcock Way, illuminance shall be a maximum of 70 foot-candles measured at ground level.

## Service Stations, Automobile Dealerships, and Exterior Sales Areas, Cont'd.

**12.** For automobile sales areas in all other areas of the City, illuminance shall be a maximum of 30 foot-candles measured at ground level. **Design Review Boards** may approve higher light levels for limited accent lighting where appropriate.

**13.** Glare from light reflected from automobile windshields in display lots is not acceptable and should be minimized by careful design of the lighting installation. Glare can result from fixtures with an adjustable aiming angle or intentionally low mounting heights.

**14.** For these and all other types of exterior sales areas, lighting levels shall be reviewed for appropriateness with the ambiance of the surrounding neighborhood.

**Note:** *The following additional requirements apply to all new installations. These requirements also apply to expansions, replacements, or renovations of existing projects, unless deemed by City Staff and Design Review Board to be minor in nature.*

**15.** Provide a **foot-candle plot** on a site plan showing illuminance to 20 feet beyond property line. Show minimum, average, and maximum foot-candles and uniformity ratio. Where adjacent to residential uses, illuminance should not exceed 0.1 (1/10) foot-candle at 10 feet beyond the property line. Where adjacent to commercial uses, illuminance should not exceed 0.2 (2/10) foot-candle at 10 feet beyond property line.

**16.** The above calculations for minimum, average, and maximum foot-candles and uniformity ratio shall be based on a statistical area that does not include points beyond the property line or more than 1.5 pole heights measured horizontally from the base of pole.

**NOTE:** Where the proposed lighting cannot be adequately represented by a point-by-point foot-candle plot, such as due to topographic features or the presence of existing buildings, City Staff or the Design Review Board may require a computer-rendered 3D lighting model.

## D. Landscape, Hardscape, and Building Lighting

### Goals:

- ◆ To meet or exceed the currently adopted **Title 24 Lighting Standards**.
- ◆ To integrate energy conservation, new lighting technologies, and traditional fixture design characteristics when used with period architectural styles, such as in **El Pueblo Viejo**.
- ◆ To harmonize with adjacent businesses and avoid the use of lighting as a means of competition.
- ◆ To promote the use of **full cut-off** type fixtures for area lighting and limit the use of decorative **lanterns** to lower level accent lighting.
- ◆ To maximize opportunities for energy conservation, while avoiding **glare** and **light trespass**, in design of lighting installations through selection of fixture type, lighting technology and location, and control of light levels.
- ◆ To integrate design of lighting installations with adjacent architecture and landscape.

### Guidelines:

**1.** Lighting technologies currently recognized as meeting these guidelines are **High Pressure Sodium (HPS)**, **Metal Halide (MH)**, **Fluorescent**, **Induction Lighting**, or **Light Emitting Diode (LED)**. Mercury Vapor (MV) may be used for illuminating landscaping. Incandescent lighting may be used for accent lighting, as allowed by **Title 24 Lighting Standards**. The use of colored lamps or filters is discouraged.

**2.** Landscape lighting should be subtle, and should be carefully **shielded** to avoid view of the source. Uplighting of landscaping should be limited to a select few elements, and should be designed to avoid **skyglow**.

## Landscape, Hardscape, and Building Lighting, Cont'd.

3. Hardscape lighting includes path lights, **bollards**, and post-top lights (other than as covered in Guidelines "A - Parking Lots and Traffic Areas", and "C - Service Stations, Automobile Dealerships, and Exterior Sales Areas"), and should use the minimum intensity required for the intended purpose. Fixtures and placement should be designed to avoid **glare**, **light trespass** onto adjacent properties, and **skyglow**.
4. Building lighting includes fixtures mounted to building surfaces, recessed downlighting, and fixtures aimed at the building. Building lighting should use the minimum intensity required for the intended purpose. Fixtures in which the lamp is not **shielded**, such as **lanterns**, should be low intensity to avoid **glare**, and should generally be used for decorative and local lighting, and not for area lighting.
5. For Hardscape and Building lighting, lamps in fixtures where the lamp is not **shielded** should not exceed a maximum of 2700 **lumens** per fixture in commercial zones and 1200 **lumens** in residential zones. Lighting of building facades should be considered for appropriateness to the ambiance of Santa Barbara, and should be subtle. (See Appendix E, Comparison of Lamp Types and Lumen Outputs)
6. Additional means may be required to minimize **glare**, such as the use of refractors, louvers, or patterned or translucent glass to obscure view of the lamp and diffuse the light output. (See Appendix E, Comparison of Lamp Types and Lumen Outputs)
7. Lighting installations shall be equipped with controls as required by **Title 24 Lighting Standards**. Plans shall specify the proposed off-time. This requirement shall include a provision for reduced light levels or reduced number of fixtures for after-hours security.
8. Lighting fixtures shall also be shown on landscaping plans to demonstrate coordination of fixtures with trees and plants.
9. Area lighting fixtures and poles should be appropriate to the style and scale of the architecture.
10. Special attention must be given to the use of compact **fluorescent** lamps (also known as CFLs) in traditional fixture types, or in any fixture where the lamp is exposed to view. Use of opal or diffusing glass, or an accessory such as an internal diffusing shade may be necessary to conceal view of the lamp, unless the lamp is of a shape that closely resembles a traditional incandescent lamp. CFL color temperature should be approximately 3000°K.

## E. Security Lighting

### Goals:

- ◆ To enhance the security of people and property.
- ◆ To provide acceptable light levels for safety and uniformity, while avoiding **glare**, **light trespass**, and overlighting.

### Guidelines:

1. Lighting technologies currently recognized as meeting these guidelines are **High Pressure Sodium (HPS)**, **Fluorescent**, **Induction Lighting**, or **Light Emitting Diode (LED)**. Incandescent may be used as allowed by **Title 24 Lighting Standards**.
2. Security lighting should be consistent with these Guidelines. Special care should be taken to control **glare** and direct view of illumination sources, and to confine illumination to the property on which the fixtures are located.
3. Lighting fixtures that are aimed at a building are much more effective for security than fixtures that are mounted on the building, which can blind observers of the property (police, neighbors or others).

## Security Lighting, Cont'd.

4. Floodlighting aimed toward adjacent properties or the public right of way is not allowed. The term floodlighting includes "barn lights", "wall packs" and aimable fixtures. Floodlighting attached to buildings is regulated by **Title 24**.

## F. Automated Teller Machines (ATMs)

### Goals:

- ◆ To integrate design of lighting installations with adjacent architecture and avoid use of lighting as a means of competition.
- ◆ To meet the minimum illumination criteria required by applicable laws (California AB 244) for the safety and security of users without overlighting.
- ◆ To avoid **glare** and **light trespass** in design of lighting installations through selection of fixture type and location, lighting technology, and control of light levels. Besides aesthetic considerations, **glare** can compromise an ATM customer's ability to observe their surroundings and identify an approaching threat.

### Guidelines:

1. Lighting technologies currently recognized as meeting these guidelines are **High Pressure Sodium (HPS)**, and **Fluorescent**. **Metal Halide** lighting is discouraged. Other types such as **Light Emitting Diode (LED)** and **Induction Lighting** may be acceptable if it can be demonstrated that they can provide a warm color quality.
2. Lighting should be carefully **shielded** to avoid view of the source by the use of awnings or other architectural elements, or provided by architecturally appropriate decorative fixtures.
3. ATM machines should be the minimum size necessary, and should not include extraneous signage. Except for data and instructional displays, internal illumination of graphics displays is not appropriate. Signage associated with ATMs may also be subject to review by the Sign Committee.

## G. Sign Lighting

### Goals:

- ◆ To integrate design of lighting installations with adjacent architecture and landscaping, and appropriateness for the surrounding neighborhood.
- ◆ To ensure subtlety and visual harmony of sign lighting and avoid use of lighting as a means of competition.
- ◆ To conform to the currently adopted **Title 24 Lighting Standards**.
- ◆ To avoid **glare**, **light trespass**, and **skyglow** through selection of fixture type and location, lighting technology, and control of light levels.

### Guidelines:

1. Externally illuminated ground signs should generally be lit with linear or compact **fluorescent** lamps, **Light Emitting Diode (LED)**, or low-wattage halogen. Fixtures that accept screw-in floodlights are not allowed, except for **shielded** fixtures that are only capable of accepting a PAR-16 or PAR-20 halogen lamp. Fixtures should be located and aimed to confine light to the sign and should be **shielded** from view by use of landscaping or architectural elements.

## Sign Lighting, Cont'd.

2. Internally illuminated ground signs and wall-mounted cabinet signs with illuminated faces are discouraged due to their inconsistency with the ambiance of Santa Barbara. When used, dark backgrounds with lighter graphics are preferred. When a dark background is not proposed, it is especially important that the background be rendered opaque, allowing light to come through the graphics only. The depth of sign cabinets shall be kept to the minimum necessary. This sign type is not allowed in *El Pueblo Viejo*.
3. Halo-lit or back-lit signs, also known as "reverse pan channel" letters, have opaque faces and sides, and are preferred over face-lit or "pan channel" letters. Letters are internally illuminated with neon or **Light Emitting Diode (LED)**, and should be the least depth feasible for the light source used. White illumination is preferred, and should be a warm white and the minimum intensity necessary. Excessive illumination can tend to "bleed" around letters and make them less legible. Dimmers for adjusting the intensity of **LEDs** are not acceptable, as there is no means of controlling future upward adjustments. Letters should be individually mounted to the building and are not permitted to be installed on an electrical "raceway" channel or cabinet unless it can be aesthetically incorporated into the sign as a design element.
4. Face-lit channel letters or "pan channel" letters have translucent faces and opaque sides. Letters are internally illuminated with neon or **Light Emitting Diode (LED)**, and should be the least depth feasible for the light source used. Illumination should be the minimum intensity necessary. Excessively bright face-lit letters tend to visually "vibrate" and contribute to **glare** and **skyglow**. Letters should be individually mounted to the building and are not permitted to be installed on an electrical "raceway" channel or cabinet unless it can be aesthetically incorporated into the sign as a design element. This sign type is not allowed in *El Pueblo Viejo*.
5. Externally illuminated wall signs and hanging signs should generally be lit with compact **fluorescent** lamps, **Light Emitting Diode (LED)**, or with low-wattage halogen. Fixtures that accept screw-in floodlights are not allowed, except for **shielded** fixtures that are only capable of accepting a PAR-16 or PAR-20 halogen lamp. Fixtures should be located and aimed to confine light to the sign and to minimize **glare** from the vantage point of pedestrians or vehicles. Wherever possible, fixtures should be integrated into, or concealed by, architectural elements. Exposed conduits on walls are not allowed.
6. Ambient light from existing lighting on the building and from nearby streetlights should be considered in the review of wall signs and hanging signs, as there may already be sufficient illumination. Especially in *El Pueblo Viejo*, use of traditional lanterns is encouraged to provide illumination.
7. **Fluorescent** and **Light Emitting Diode (LED)** lamps should be warm to neutral color temperature (2700K to 3500K). **Fluorescent** lamps in internally illuminated cabinets may be 4100K. **Fluorescent** lamps should not be of the High Output (HO) or Very High Output (VHO) type.
8. Mounting of light fixtures on roofs to illuminate wall signs above a roof is not allowed.
9. Generally, sign lighting should reflect a traditional approach and should be subservient to the signage itself. It is inconsistent with the ambiance of Santa Barbara to utilize lasers, moving or blinking lights, or optically projected images.
10. See specific Guidelines section for signage associated with Automatic Teller Machines (ATMs).

## H. Sports and Recreation Lighting

### Goals:

- ◆ To recognize the valuable contribution to the community of sports and recreation facilities, and to integrate lighting for nighttime uses, where appropriate, with the ambiance of Santa Barbara.
- ◆ To provide acceptable light levels for the intended purpose, while avoiding **glare**, **light trespass**, and **skyglow**.

### Guidelines:

1. Per the City of Santa Barbara Outdoor Lighting Ordinance (Appendix F), outdoor recreational court lighting (as defined in the Ordinance) is generally prohibited in all residential zones of the City.
2. In all other zones, and where permitted in residential zones pursuant to provisions of the Municipal Code, all applications for projects including lighting for sports and recreational uses must be considered on a case-by-case basis due to diverse site characteristics in the City of Santa Barbara.
3. Considerations in the review of sports and recreation lighting include:
  - a) The nature of the activity for which the lighting is intended,
  - b) The immediate context of the project and compatibility with surrounding neighborhoods,
  - c) The larger context of the project and views of the project from hillside neighborhoods,
  - d) Appropriate **shielding** of fixtures to address **light trespass**, **glare**, and **skyglow**,
  - e) Reflectances of lit surfaces to minimize **skyglow** from reflected light,
  - f) Mandatory Provisions for controls for reduced lighting levels after game and/or off-time.
4. The Illumination Engineering Society of North America (IESNA) publishes recommended illumination levels for sports and recreation lighting for different types of activity and level of play. Generally, these recommendations should be considered for applicability, but may significantly exceed appropriate lighting levels given the context of the project site and the overall ambiance of Santa Barbara.

— SECTION II —

**Streetlighting & Pedestrian Lighting**

**in the Public Right-of-Way**

(NOTE: Words in ***bold italics*** are defined in the Glossary.)

**Part One - General Guidelines**

- ♦ Streetlighting & Pedestrian Lighting shall be designed to control ***glare***, minimize ***light trespass*** onto adjacent properties, minimize ***direct upward light emission***, promote effective safety and security, provide for safe operation of motor vehicles, and enhance safety for all modes of travel. The minimum intensity needed for the intended purpose should be used. This paragraph is not intended to preclude maintaining the use of existing decorative ***lantern*** fixtures with visible lamps, provided they meet other provisions of these guidelines.
- ♦ It is the practice of the City to meet or exceed the currently adopted ***Title 24 Lighting Standards*** for ***full cut-off luminaires*** and energy efficiency, regardless of the applicability of ***Title 24 Lighting Standards*** to lighting in the public right-of-way.
- ♦ In all residential areas, illumination levels should be compatible with residential uses. Lighting for commercial installations proximate to residential uses should be designed to be compatible with residential illumination levels and avoid ***light trespass***.
- ♦ Streetlights should be compatible with their context (i.e. residential neighborhoods vs. commercial districts) and should, to the maximum extent feasible, have a City-wide consistent theme within which variation can occur.
- ♦ In new development, streetlights shall be installed to meet City standards. Streetlights are typically required at all intersections, locations of pedestrian crossings, changes of direction and ends of roads, and spaced as described in the ***Public Works Construction Standard Details***.

**Part Two - Specific Guidelines**

**A. Streetlights**

**Goals:**

- ♦ To provide cohesive and homogenous illumination for streetlighting through the use of light sources similar in color to incandescent lighting.
- ♦ To meet ***Public Works Construction Standard Details*** light levels for safety and uniformity, but avoid ***glare***, ***light trespass***, and overlighting.
- ♦ To use energy efficient light fixtures for new and retrofit installations as feasible. The City should be at the forefront of utilizing new technologies when they can be aesthetically integrated, including the use of energy efficient light sources and solar energy, to minimize energy and lamp replacement maintenance costs.
- ♦ To identify “Opportunity Corridors” where anticipated future facility upgrades present an opportunity to establish a new character for major streets, or to extend an already established character. See ***City Streetlight Style & Location Map*** (Appendix H) for more information.
- ♦ To encourage the use of streetlights as an element to establish the character of neighborhoods, as distinguished from arterial streets.

# OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

## Streetlights, Cont'd.

- ◆ To standardize pole and fixture styles, simplifying review by **Design Review Boards** and minimizing inventory maintained by the City.
- ◆ To establish the use of textured concrete poles for new and replacement installations to minimize maintenance costs, except where it is determined that continued use of decorative cast metal poles in existing corridors is appropriate, such as in the **El Pueblo Viejo District**.
- ◆ To enhance the scenic environment of the City by recognizing and taking advantage of opportunities to incrementally replace **Cobra Head** fixtures.

### Guidelines:

1. Lighting technologies currently recognized as meeting these guidelines are **High Pressure Sodium (HPS)**. The use of Deluxe **HPS** lamps is encouraged to provide high color rendering ability. **Metal Halide (MH)** lighting is discouraged. Other types such as **Light Emitting Diode (LED)** and **Induction Lighting** may be acceptable if it can be demonstrated that they can provide a warm color quality.
2. **Poles, luminaires, and accessories shall comply with the Public Works Standard Details unless otherwise approved by the Public Works Director and Design Review Boards for aesthetic issues within their purview.**
3. **Fixtures should be in scale with the proposed pole height.**
4. Lamp size shall be per **Public Works Construction Standard Details**.
5. Total pole and fixture height shall be per **Public Works Construction Standard Details**.

## B. Pedestrian Lighting

### Goals:

- ◆ To enhance safety and security for pedestrians while adding a pedestrian-scale element to streetscapes.
- ◆ To encourage local residents and visitors to walk through commercial and residential neighborhoods as an alternative to using their cars.

### Guidelines:

1. **Lighting technologies currently recognized as meeting these guidelines are High Pressure Sodium (HPS) and Induction Lighting.**
2. **Poles, luminaires, and accessories shall comply with the Public Works Construction Standard Details unless approved by the Public Works Director and Design Review Board for aesthetic issues within their purview.**
3. **Fixtures mounted on a pole used solely for pedestrian lighting should be in scale with the proposed pole height. Fixtures mounted on the same pole as streetlighting poles should have a pedestrian scale. Fixtures mounted on poles of alternating heights should be the same scale and mounting height.**
4. Lamp size shall not exceed 70 watts per fixture.
5. Total pole and fixture height should be per **Public Works Construction Standard Details**.
6. Lighting installations shall be equipped with controls for photocell on and timer off. Plans shall specify the off time proposed.

## Pedestrian Lighting, Cont'd.

7. When required by the Public Works Department, improvement plans shall provide a point by point foot-candle plot on a site plan showing illuminance to 20 feet beyond property line. Show minimum, average, and maximum foot-candles and uniformity ratio. Where adjacent to residential uses, illuminance should not exceed 0.1 (1/10) foot-candle at 10 feet beyond property line. Where adjacent to commercial uses, illuminance should not exceed 0.2 (2/10) foot-candle at 10 feet beyond property line.
8. Calculations shall be based on a statistical area that does not include points beyond the property line or more than 1.5 pole heights measured from the base of pole.
9. Pedestrian poles shall be designed to minimize light intrusion issues in residential areas, and prevent extreme glare.

## C. El Pueblo Viejo

### Goals:

- ◆ To preserve the existing inventory of streetlight poles and fixtures that contribute to defining the character of **El Pueblo Viejo**, and maintain them to the highest standard. These include the **Carrillo Street Fixture**, **Chapala Street Fixture**, **State Street Fixture**, and **Teardrop Fixture**.
- ◆ To require the use of existing pole and fixture types for extensions of existing installations.
- ◆ To establish the use of the **Teardrop Fixture** and metal pole with decorative base as the required new or replacement fixture for **Cobra Head** and **Marbelite Pole** installations at intersections.
- ◆ To introduce the use of the Dome Style Fixture and Marbelite Pole at locations where the foregoing fixture types are not specified.
- ◆ To respect the scale of the downtown streets by discouraging the use of accessories such as mast-arm-mounted traffic signals except on major boulevards, as determined by the **Public Works Director** and the **Design Review Board**.

### Guidelines:

1. Poles, luminaires, and accessories shall comply with the **Public Works Construction Standard Details** and shall be as approved by the Historic Landmarks Commission as acceptable for use in **El Pueblo Viejo**.
2. The **City Streetlight Style & Location Map** (Appendix H) delineates the locations and extents of existing fixture and pole types within **El Pueblo Viejo**.
3. Lighting within **El Pueblo Viejo** shall be consistent with these guidelines in all other respects, while utilizing fixtures and poles approved for the district.

## D. Private Roads

- ◆ It is the City's practice and policy to design private roads to City Standards, including streetlights.
- ◆ The Airport roads south of Hollister Avenue are owned and maintained by the Airport Department. They are considered private roads and shall be designed to City Standards.

## ***Appendices***

---

### **Appendix A. Exceptions to Guidelines**

Nothing in these guidelines shall preclude the ***Design Review Board***, with concurrence from the ***Public Works Director***, from reviewing and approving, or conditionally approving, an exception to these guidelines, provided such exceptions are consistent with applicable State and local laws and regulations, including ***Public Works Construction Standard Details***, as determined by the ***Public Works Director***. Exceptions may include, but are not limited to, illuminance level, illumination source, or pole height. The ***Design Review Board*** shall include findings in their approval, such as references to historical authenticity, special circumstances, existing installation, or other similar findings as deemed appropriate. The approval of an exception shall not be construed as establishing a precedent.

### **Appendix B. References to Other Ordinances, Guidelines, and Codes**

The City of Santa Barbara has additional ordinances and guidelines which may contain specific requirements relating to lighting, including, but not limited to:

- ◆ Outdoor Lighting Ordinance, Municipal Code Chapter 22.75 (Included as Appendix F)
- ◆ ***El Pueblo Viejo District***, ordinance and guidelines
- ◆ Sign Committee, ordinance and guidelines
- ◆ ***Public Works Construction Standard Details***
- ◆ Single Family Residence Design Guidelines
- ◆ Solar Energy System Guidelines

Outdoor lighting is also subject to compliance with State of California ***Title 24 Lighting Standards***.

### **Appendix C. Compliance Statement**

**SECTION I – Building and Site Lighting** - Plans submitted for review and approval by the City of Santa Barbara Community Development Department shall bear the following compliance statement on the first sheet of outdoor lighting plans: The person signing the statement must be qualified under the Business and Professions Code to prepare plans.

#### **Outdoor Lighting Compliance Statement**

As preparer of these plans for outdoor lighting, I certify that this lighting design meets the City of Santa Barbara Outdoor Lighting Ordinance and Outdoor Lighting Design Guidelines.

Principal Lighting Designer Name	Signature	Date
----------------------------------	-----------	------

Plans submitted for review and approval shall provide, reproduced on the plans, information sufficient to demonstrate compliance with the requirements of these Guidelines; including plan and elevation drawings, lamp type and wattage, additional information that may be required under certain sections of these Guidelines such as ***foot-candle plots*** or controls, additional information as requested by City Staff or the ***Design Review Board***, and the above Compliance Statement. Manufacturers' fixture cut-sheets may be reproduced on the plans or submitted as attachments. Changes after approval are subject to the same review process.

## Appendix D. Glossary of Lighting Terms & Streetlight Types

This Glossary contains basic lighting terminology. Technical terminology as used in these Guidelines is per professional and industry standard definitions. (Words in definitions in ***bold italics*** are defined in the Glossary.)

### ACORN STYLE FIXTURE -

A post - top streetlight fixture in use on the Riviera and Loma Alta Drive. These traditional fixtures typically are low-wattage ***High Pressure Sodium (HPS)*** with globes that diffuse the light source, but do not direct light towards the ground, nor control upward light emission, and therefore are not in compliance with

***Title 24 Lighting Standards*** for new installations. Newer fixture designs are available that use reflectors and/or refractors to control light and may comply with ***Title 24 Lighting Standards***. Where used, new fixtures should emulate the details and simplicity of the originals as closely as possible. (See ***City Streetlight Map***, Appendix H, for locations.)

**AMBIENT LIGHTING** - The general character and overall level of illumination in a particular area.

**BOLLARD** - A type of architectural outdoor lighting fixture that is a stout upright ground-mounted unit typically used for grounds and outdoor walkway lighting, usually 42" high or less.

### CARRILLO STREET FIXTURE -

A historic fixture style that exists on Carrillo Street from Chapala Street to Olive Street. (See ***City Streetlight Map***, Appendix H, for locations.)



**CHAPALA STREET FIXTURE** - A historic style fixture that exists on Chapala Street from Montecito Street to Victoria Street. (See ***City Streetlight Map***, Appendix H, for locations.)



### CITY STREETLIGHT STYLE &

**LOCATION MAP** - A map of the City that identifies the location of existing streetlighting, depicted with a graphic reference to types of street and pedestrian lights and poles. The map shall be updated periodically to reflect additional installations

and changes, and is intended for use by the City's Boards and Commissions to understand the context of applications before them. (Appendix H of these guidelines. They are available at the Public Works Department permit counter)

### COBRA HEAD FIXTURE -

A generic type of ***luminaire*** used for general roadway lighting, attached to an arm which is mounted to the pole. These fixtures

are the most extensively used in the City and are found on ***Marbelite*** poles, ***SCE poles***, and some metal poles. Newer models of ***cobra head*** fixtures are ***cut-off*** type. (See ***City Streetlight Map***, Appendix H, for locations.)

**CUT-OFF FIXTURE** - (See also ***Full Cut-off Fixture***) A lighting fixture that does not allow ***Direct Upward Light Emission***, but does not provide as complete cut-off as a ***Full Cut-off Fixture***.

**DESIGN REVIEW BOARD** - Projects in the City involving lighting may require review and approval by the appropriate Design Review Board: the Architectural Board of Review, the Historic Landmarks Commission, or the Single Family Design Board. The project may also require review by the Planning Commission.

**DIRECT UPWARD LIGHT EMISSION** - Light rays that are emitted from a fixture that are above a horizontal plane intersecting that light source or fixture.

### DOME STYLE FIXTURE -

A ***cut-off*** style of ***luminaire*** that incorporates ***optical*** elements to direct light down and has a flat-glass lens that minimizes ***glare***. (See ***City Streetlight Map***, Appendix H, for locations.)

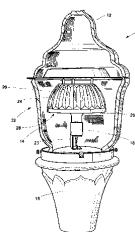
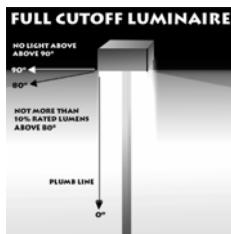


**EL PUEBLO VIEJO (EPV)** - A historic district of Santa Barbara defined in Municipal Code Section 22.22. (See ***City Streetlight Map***, Appendix H.)

**FLUORESCENT** - An energy efficient light source available in a wide variety of shapes and sizes, from linear tubes to compact forms that are a replacement for ***incandescent*** lamps.

**FOOT-CANDLE, FOOT-CANDLE PLOT** – A foot-candle is a quantitative unit measuring the amount of light falling on a surface. A foot-candle plot is a diagram depicting the location of all light poles and building mounted lighting fixtures that contribute to area lighting, and numeric foot-candle values for maintained lighting levels which shall be represented in a point-by-point grid. An iso-lumen plot depicting contour lines of equal light level is not an acceptable substitute.

**FULL CUT-OFF FIXTURE** – (See also *Cut-off Fixture*)



A lighting fixture constructed so that all light emitted by the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the fixture, is projected below the horizontal as determined by photometric test or certified by the manufacturer. Any structural part of the light fixture providing this shielding must be permanently affixed.

**GLARE** - Brightness in the field of view that is sufficiently greater than the amount to which the eye is adapted, causing annoyance, discomfort, or loss of visual performance and visibility.

**HID** - High Intensity Discharge (HID) lamps include **High Pressure Sodium (HPS)**, **Metal Halide (MH)**, and Mercury Vapor (MV).

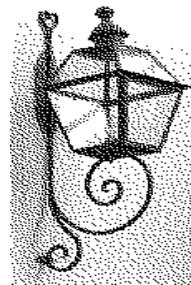
**HIGH PRESSURE SODIUM (HPS)** - An energy-efficient light source that has a pinkish-yellowish cast. Deluxe HPS lamps have an improved whiter color.

**INCANDESCENT** - Includes low-voltage lamps and halogen lamps. Historically used for outdoor lighting, especially in lanterns. Incandescent lighting is the least energy-efficient source and is of limited use for outdoor lighting.

**INDUCTION LIGHTING** - A new lighting technology, characterized by long life, energy efficiency, and a white light that is not as yellowish as **High Pressure Sodium**, nor as bluish as **Metal Halide**.

**INTERNATIONAL DARK-SKY ASSOCIATION** – “The mission of the International Dark-Sky Association (IDA) is to preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting.” The IDA website ([www.darksky.org](http://www.darksky.org)) offers information on lighting techniques and preventing light pollution.

**LANTERN** - The historical fixture type for lighting and may be mounted to a wall, suspended from a ceiling, or atop a pole (see also *Carrillo Street Fixture* and *State Street Fixture*).



**LED (LIGHT EMITTING DIODE) LIGHTING** - A type of

energy-efficient lighting currently installed in the City's traffic signal system. It is expected that advances in the technology of LED lighting will include bringing greater light output and better quality white light, opening up more applications for streetlighting and other exterior lighting. Also used extensively in sign lighting.

**LIGHT TRESPASS** - Light produced by a fixture that illuminates a surface beyond the boundaries of the property on which it is located.

**LUMEN** – A quantitative unit measuring the amount of light emitted from a light source. Lumens are the most useful measurement for comparison of the light output of different lamps. Watts are a measure of power consumed, and therefore not useful for comparison of different lamp types as they don't account for efficiency of the light source. (See Appendix E, Comparison of Lamp Types)

**LUMINAIRE** - The term is used interchangeably with “Fixture” in these guidelines and is the complete light fixture assembly comprising the lamp, electrical components, *Optics*, lenses, and housing.

**MARBELITE POLE** - The Marbelite Company no longer exists, but the term “Marbelite” is used generically for concrete poles with variations of color and texture achieved through combinations of colored marble-chip aggregate and plain or colored cement, which may also be sandblasted or receive protective coatings. Marbelite poles approved for use in the City are specified in the *Public Works Construction Standard Details*.

**METAL HALIDE (MH)** – An energy-efficient light source that has a bluish cast.

**MOUNTING HEIGHT** - *Pedestrian light fixtures* are usually mounted at a height of 14 feet. Streetlights in the City are generally mounted on a commercial pole which is 29' tall or on a residential pole which is 20' tall. This information is specified in the *Public Works Construction Standard Details*.

**OPTICS, OPTICAL** - Components of a *luminaire* that control and direct light from the lamp. Reflectors are often used when the lamp position is concealed from normal viewing angles. Refractors are textured glass or plastic components surrounding the lamp that act as many prisms to bend light. See *Cut-off Fixture* illustration.

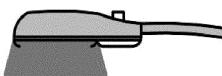
**PEDESTRIAN LIGHT FIXTURE** - A *luminaire* of a smaller scale than streetlight fixtures that is intended to illuminate the pedestrian path of travel. These fixtures may be attached to the same pole as a streetlight but on the sidewalk side, or on intermediate poles of a smaller scale to fill in between streetlights and provide more even illumination and security for pedestrians. They may also be attached to undercrossings and bridges. See *Public Works Construction Standard Details* for specifications.

**PUBLIC WORKS DIRECTOR** – The Director or his designee, which may include the City Engineer or the Facilities and Energy Manager.

#### **PUBLIC WORKS CONSTRUCTION STANDARD**

**DETAILS** - A booklet of construction design standards and details approved by the Public Works Director, officially titled *City of Santa Barbara Public Works Department Construction Standard Details*.

**SCE POLE AND FIXTURE** - A pole, generally wooden, owned by Southern California Edison (SCE) that supports overhead utilities and is frequently equipped with a SCE-owned **Cobra Head** fixture.



**SHIELD (EXTERNAL)** - Additional shielding may sometimes be required on luminaires installed adjacent to residential uses to prevent *light trespass*. Shielding on street-lights is provided and installed by the City on a case-by-case basis.

**SHIELDED, SHIELDING** - Components that serve to obscure direct view of the light source, or to prevent *skyglow* and *light trespass*, and may be either opaque or translucent. Shielding includes components internal and/or external to the fixture. Internal shielding includes reflective hoods, louvers, refractors, diffusers (either surrounding the lamp or as part of the enclosure, such as patterned or opal glass). External shielding includes attached opaque shields, architectural elements, and landscaping elements. Landscaping shall not be considered as shielding for preventing *light trespass*.

**SKYGLOW** - The adverse effect of brightening the night sky due to man-made lighting, caused either by *direct upward light emission*, light reflected off illuminated surfaces, or scattering due to haze.

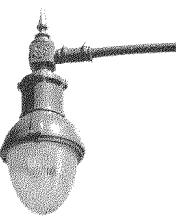
**SOLAR** - As solar technologies evolve, applications may include streetlights having photovoltaic panels remotely located, such as on a roof, that can supply energy to a group of streetlights.

**STATE STREET FIXTURE** - A historic fixture style that exists on State Street from Cabrillo Boulevard to Micheltorena Street, Carrillo Street from Chapala Street to US 101, generally in the first block on either side of State Street in the downtown core, and some locations on Cabrillo Boulevard. (See *City Streetlight Map*, Appendix H, for locations.)



**STREETLIGHT** - The entire assembly of pole, mounting arm (where applicable) and *luminaire*. Streetlights illuminate the road and vary between 16-29 feet in height. This information is specified in the *Public Works Construction Standard Details*.

**TEARDROP LIGHT FIXTURE** - A fixture style that is primarily used at intersections, generally in the downtown area. (See *City Streetlight Map*, Appendix H, for locations.)



**TITLE 24 LIGHTING STANDARDS** - Title 24, Part 6 of the California Code of Regulations: Energy Efficiency Standards for Residential and Nonresidential Buildings. It specifies requirements for luminaire type and efficiency, controls, and light distribution. The standards & compliance manuals are available at <http://www.energy.ca.gov/title24/>

## OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

### Appendix E. Comparison of Lamp Types and Lumen Outputs

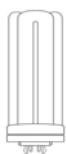
These charts are for general comparison only, and are sorted by ***lumens*** in order of ascending brightness. They are divided into 2 tables; the first compares “omni-directional” lamps with light output in all directions, and the second compares “floodlight” lamps with their own integral optical reflector. They do not take into consideration all the many variables, such as coated vs. uncoated versions, the fact that all lamps lose some brightness after a “breaking-in” period (some types more than others), or that dirt can accumulate on fixtures or lamps and reduce light output; nor do the floodlights take into account spot vs. flood beam spreads.

Instead, these charts will serve to aid in comparing relative brightness of different lighting technologies. For example, it can be seen that the output of a 13W compact fluorescent is very close to that of a 60w incandescent lamp. This is useful for comparing, for example, the impact of a lantern with an ***incandescent*** lamp, vs. a compact ***fluorescent***, vs. a high-intensity-discharge lamp such as ***High Pressure Sodium (HPS)*** or ***Metal Halide (MH)***. ***Light Emitting Diode (LED)*** lamps are not included, as their technology is so different as to preclude a meaningful comparison.

**TABLE 1 - OMNI-DIRECTIONAL LAMPS**



Incandescent A-lamp



Plug-in – Compact Fluorescent – Screw-in



High Pressure Sodium/Metal Halide



Lamp Description	Watts	Lumens	Color Temperature in °Kelvin	OK Unshielded Comm. Zones*	OK Unshielded Res. Zones*
Incandescent A-lamp	40	490	Warm 2700	YES	YES
Incandescent A-lamp	60	870	Warm 2700	YES	YES
Compact Fluorescent	13	900	Warm to Cool 2700-4100	YES	YES
Incandescent A-lamp	75	1200	Warm 2700	YES	YES
Compact Fluorescent	18	1200	Warm to Cool 2700-4100	YES	YES
Incandescent A-lamp	100	1690	Warm 2700	YES	NO
Compact Fluorescent	26	1710	Warm to Cool 2700-4100	YES	NO
Incandescent A-lamp	100	1730	Warm 2700	YES	NO
HPS-High Pressure Sodium	35	2150	Warm 2000	YES	NO
Compact Fluorescent	32	2200	Warm to Cool 2700-4100	YES	NO
Metal Halide	32	2400	Cool 4000	YES	NO
Compact Fluorescent	42	2700	Warm to Cool 2700-4100	YES	NO
Incandescent A-lamp	150	2800	Warm 2700	YES <sup>†</sup>	NO
Metal Halide	50	3200	Cool 4000	YES <sup>†</sup>	NO
HPS-High Pressure Sodium	50	3800	Warm 2000	YES <sup>†</sup>	NO
Delux-HPS (coated)	70	3800	Warm 2200	YES <sup>†</sup>	NO
Metal Halide	70	5300	Cool 4000	NO	NO
HPS-High Pressure Sodium	70	5950	Warm 2000	NO	NO
Metal Halide	100	8500	Cool 4000	NO	NO
HPS-High Pressure Sodium	100	8800	Warm 2000	NO	NO

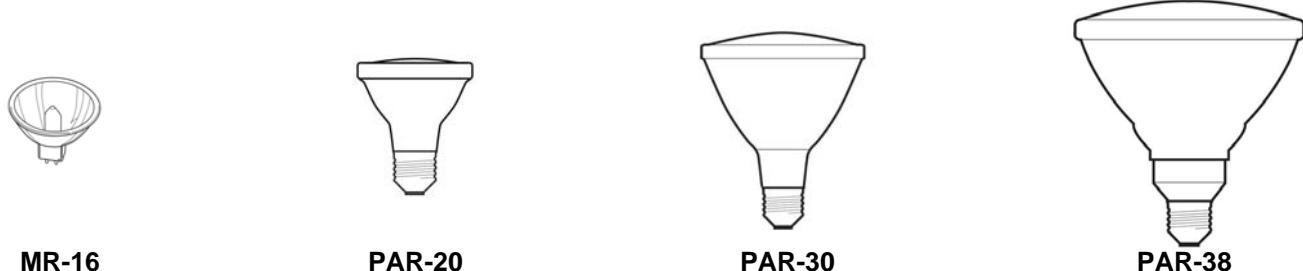
\*Per Guidelines SECTION I requirements for exposed lamps. See Glossary definition of ***shielded***.

<sup>†</sup>Limited to site lighting as allowed in Guidelines “A - Parking Lots and Traffic Areas”, and “C - Service Stations, Automobile Dealerships, and Exterior Sales Areas”

## OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

### **Comparison of Lamp Types and Lumen Outputs, cont'd.**

**TABLE 2 - REFLECTOR FLOODLIGHT LAMPS**



Lamp Description	Watts	Lumens	Color Temperature in °Kelvin	
MR-16 Halogen	20	350	Neutral	2900
PAR-20 Halogen	50	570	Neutral	2800
PAR-30 Halogen	50	630	Neutral	2800
MR-16 Halogen	50	700	Neutral	3050
PAR-20 Metal Halide	20	1000	Neutral	3000
PAR-30 Halogen	75	1050	Neutral	2850
PAR-38 Halogen	75	1050	Neutral	2850
PAR-30 Metal Halide	20	1200	Neutral	3000
PAR-38 Halogen	90	1310	Neutral	2900
PAR-38 Halogen	120	1900	Neutral	2950
PAR-20 Metal Halide	39	2100	Neutral	3000
PAR-38 Standard	150	2175	Warm	2775
PAR-30 Metal Halide	39	2400	Neutral	3000
PAR-30 Metal Halide	70	4700	Neutral	3000

# OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

## Appendix F. City of Santa Barbara Outdoor Lighting Ordinance

Excerpted from City of Santa Barbara Municipal Code, Title 22 (Chapter 22.75). Note: Ordinances are occasionally amended – visit the [City of Santa Barbara website](#) to verify the most recent version.

### Chapter 22.75 OUTDOOR LIGHTING

rev. 6/30/07

#### Sections:

##### **22.75.010 Purpose.**

##### **22.75.020 Definitions.**

##### **22.75.030 Certain Lighting Prohibited.**

##### **22.75.040 Certain Lighting Exempted.**

##### **22.75.050 Outdoor Lighting Review by the Architectural Board of Review, the Single Family Design Board, and the Historic Landmarks Commission.**

##### **22.75.060 Control of Nuisance Lighting In and Adjacent to Residential Zones.**

##### **22.75.010 Purpose.**

In order to preserve and enhance the unique qualities of Santa Barbara's residential neighborhoods and its visual environment, it is essential to encourage the highest quality of outdoor night-time lighting through the adoption of lighting standards.

This ordinance is intended to reduce problems created by improperly designed and incorrectly installed outdoor lighting, particularly in the City's residential zones. It is intended to provide for safety and security concerns, without contributing to the problems associated with glare, light trespass, or skylight, and to promote the efficient use of energy.

This ordinance establishes certain regulations and design review requirements intended to limit the uses of outdoor lighting to certain appropriate land uses and to prohibit the use of certain lighting fixtures.

This ordinance recognizes the benefits of outdoor night-time lighting and provides clear guidelines for its design and installation to help maintain and complement Santa Barbara's character. (Ord. 5035, 1997.)

##### **22.75.020 Definitions.**

For the purposes of this Title, the following words and phrases shall have the meanings set forth herein:

A. **ADJACENT.** Immediately next to.

B. **AMBIENT LIGHTING.** The general character and overall level of illumination in a particular area.

C. **DIRECT UPWARD LIGHT EMISSION.** Light rays that are emitted from a fixture that are above a horizontal plane intersecting that light source or fixture.

D. **GLARE.** Brightness in the field of view that is sufficiently greater than the amount to which the eye is adapted, causing annoyance, discomfort, or loss of visual performance and visibility.

E. **LASER LIGHTS.** A laser source light, or any similar high intensity light, used for outdoor advertising or entertainment, when projected above the horizontal.

F. **LIGHT SOURCE.** Any man-made light source, or collection of light sources that produce light by any means.

G. **LIGHT TRESPASS.** Light produced by a Lighting Fixture that illuminates a surface beyond the boundaries of the property on which it is located.

H. **LIGHTING FIXTURE.** A complete unit consisting of a Light Source together with a housing and parts designed to distribute and aim the light, located outside a building, including but not limited to, fixtures attached to any part of a structure, located on the surface of the ground, or located on free standing poles.

I. **LOW VOLTAGE.** Operating at 24 volts or less or as defined by Section 551-2 of the National Electrical Code (1993 edition) or as such Code is subsequently amended from time to time.

J. **NUISANCE LIGHTING.** Includes, but is not limited to, Glare, Light Trespass, and Skylight.

K. **OUTDOOR LIGHTING.** The night time illumination of an outside area or object, or any man-made light emitting object located outdoors.

L. **OUTDOOR RECREATIONAL COURT.** Includes, but is not limited to, a field, court, or other area, whether permanent or temporary, designed or used for playing any sport or game, such as tennis, volleyball, basketball, or badminton, or similar outdoor game or sport, but not including lighting for a swimming pool which is located beneath the surface of the water.

## OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

**M. SEARCHLIGHT.** A mobile or fixed projector designed to produce an approximately parallel beam of light which is aimed above the horizontal plane, the use of which includes, but is not limited to, advertising for special events.

**N. SHIELDED.** A Lighting Fixture having a configuration of the housing or optics that prevents a direct view to the light source from normal viewing angles (i.e., less than 20° above the horizontal plane).

**O. SKYGLOW.** The adverse effect of brightening of the night sky due to man-made lighting.

(Ord. 5035, 1997.) 435-1 rev. 6/30/07

### **22.75.030 Certain Lighting Prohibited.**

**A. GENERAL PROHIBITIONS.** The use of the following Lighting Fixtures shall be prohibited in all zones of the City:

1. Mercury vapor and low-pressure sodium fixtures and lamps except when used for landscape lighting accent purposes.
2. Searchlights, Laser Lights, or similar high intensity outdoor lights except pursuant to a special lighting event permit granted pursuant to subsection C hereof.
3. Lighting Fixtures mounted in such a way as to illuminate a roof or an awning.
4. Lighting Fixtures mounted to aim light only towards a property line.
5. Lighting Fixtures mounted in a way that is distracting to motorists or in a way that interferes with the safe operation of a motor vehicle, as may be determined by the City Engineer.
6. Lighting that is blinking, moving, or which changes in intensity except small temporary lighting fixtures installed and used only during the period between the last week of November and first week of January of the following year.

**B. OUTDOOR RECREATIONAL COURT LIGHTING IN RESIDENTIAL AREAS.** The lighting of an Outdoor Recreational Court is prohibited in all residential zones of the City except where such a Court is located on a property used for non-residential purposes in accordance with the applicable provisions of Title 28 for non-residential uses in residential zones.

**C. SPECIAL LIGHTING EVENTS.** Upon the application of a property owner or a business within the City, the Community Development Director may grant a temporary permit for the use of a searchlight, laser light or other similar lighting fixture for a period not to exceed eight (8) consecutive hours, provided that no such permit shall be granted for any one property (or business location) within the City more often than five (5) times during any 180 day period and provided further that in no case shall a searchlight, laser light, or other similar lighting fixture be operated pursuant to such a permit between midnight and sunrise. (Ord. 5035, 1997.)

### **22.75.040 Certain Lighting Exempted.**

The use of the following Lighting Fixtures and Light Sources are exempted from regulation pursuant to this Chapter:

**A. LOW VOLTAGE FIXTURES.** Low Voltage lighting except for those Fixtures regulated pursuant to subsection 22.75.030A(6) above.

**B. CONTROLLED FIXTURES.** A Lighting Fixture controlled by a motion detector in a residential zone provided the motion detector is predominantly in the off mode and it is installed to minimize Nuisance Lighting. (Ord. 5035, 1997.)

### **22.75.050 Outdoor Lighting Review by the Architectural Board of Review, the Single Family Design Board, and the Historic Landmarks Commission.**

Those projects for which design review is required by the Architectural Board of Review pursuant to Chapter 22.68, the Single Family Design Board pursuant to Chapter 22.69, or the Historic Landmarks Commission pursuant to Chapter 22.22, shall also be reviewed for consistency with the City Outdoor Lighting Design Guidelines approved by resolution of the City Council. (Ord. 5416, 2007; Ord. 5035, 1997.)

### **22.75.060 Control of Nuisance Lighting In and Adjacent to Residential Zones.**

**A. GENERALLY.** Outdoor lighting in residential zones and outdoor lighting on real properties adjacent to residential zones shall be designed, installed, and operated so that it is compatible with the ambient lighting of the neighborhood in which it is located. Such lighting shall be designed, installed, and operated to control glare, prevent light trespass onto adjacent areas, minimize direct upward light emission, promote effective security, avoid interference with safe operation of motor vehicles. The minimum intensity needed for the intended purpose shall be used.

**B. ENFORCEMENT.** The staff of the Community Development Department shall be responsible for the enforcement of this Section provided, however, that enforcement shall occur only upon a written complaint and upon a determination by City enforcement staff that the light or lights constitutes Nuisance Lighting which is unreasonably and negatively affecting a neighboring resident. Upon such a determination, the light or lights shall constitute a public nuisance which may be abated by the City and which, if necessary, may be enjoined by a court of competent jurisdiction.

**C. ENFORCEMENT MEASURES.** Prior to the initiation of legal measures for the enforcement of this Section, the staff of the Community Development Department shall attempt to remedy a reasonable complaint concerning Nuisance

## OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

Lighting by recommending or, if necessary, by requiring the property owner of the property from which the light emanates to take appropriate steps to eliminate the Nuisance Lighting. Such steps may include, but are not limited to, each of the following (or any combination thereof) in the priority listed herein:

1. The use and application of appropriate lighting equipment, fixture locations, shielding, light sources and illumination intensities, and through the elimination of unnecessary lighting.
2. Nuisance Lighting control through the use of vegetation, landscaping, fences or similar screening methods and fixture aiming adjustments.
3. Restrictions on the hours of operation or by requiring the use of motion detector switches or timers to trigger the lights only on an as needed basis.
4. The preparation and implementation of a professional lighting plan designed to avoid Nuisance Lighting which plan is reviewed by and acceptable to the Architectural Board of Review or the Historic Landmarks Commission, as applicable.

**D. PRIVATE RIGHT OF ACTION.** Any aggrieved person may enforce the provisions of this Section by means of a civil action seeking injunctive relief in a court of competent jurisdiction.

(Ord. 5035, 1997.)

---

# OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

## Appendix G. Plan Review Checklist

(NOTE: Words in ***bold italics*** are defined in the Glossary.)

This section is designed for use by City Staff and ***Design Review Board*** members during review of an application for outdoor lighting. It may also be useful to applicants as a checklist to determine that plans submitted are complete. These checklists may be expected to be revised from time to time as experience is gained in their application. These checklists are not a part of the Guidelines adopted by resolution by the City Council. Where there is a conflict between these checklists and the text of the Guidelines, the Guidelines shall govern.

To begin, determine the section(s) relevant to the project being reviewed, and the checklist(s) to be used. The checklists reflect general requirements, but the text of the Guidelines should be checked for allowable alternatives for special circumstances.

### OUTDOOR LIGHTING GUIDELINE SECTIONS

- A. Parking Lots and Traffic Areas**
- B. Parking Garages**
- C. Service Stations, Automobile Dealerships, and Exterior Sales Areas**
- D., E., F. Landscape, Hardscape, and Building Lighting; Security Lighting; Automated Teller Machines (ATMs)**
- G. Sign Lighting**
- H. Sports and Recreation Lighting** – no checklist due to unique circumstances

# OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

## A. Plan Review Checklist - Parking Lots and Traffic Areas

- Foot-candle plot** unless expansion, replacement, or renovation of existing project, and deemed by City Staff and Design Review Board to be minor in nature.
- Should have point-by-point **foot-candle** values arranged in a grid, and should cover the project site and extend 20' beyond property line. A plot of "contour lines" of equal light levels is not an acceptable substitute.
- Should have chart or text block showing:
  - Minimum foot-candles
  - Average foot-candles –
    - Design light level target is 1 fc, check to see it doesn't exceed 1.5 fc
  - Maximum foot-candles
  - Uniformity ratio (maximum fc to minimum fc) –
    - Check that it doesn't exceed 5:1
  - The above calculations for minimum, average, and maximum foot-candles and uniformity ratio are based on a statistical area that does not include points beyond property line or more than 1.5 pole heights measured horizontally from the base of pole. Includes all points within the pole field.
- Check to see that foot-candles values on plan roughly agree with info in text block above.
- Check to see that at 10' beyond the property line, foot-candles values don't exceed 0.1 (1/10) fc next to residential, or 0.2 (2/10) next to commercial.
- Plans have lighting controls as required by Title 24 Lighting Standards, specify off-time.
- Manufacturers' product sheets showing representation of fixture design, lamp type, wattage, and other pertinent information including color.
- Landscape plan to show pole locations to determine coordination of lighting with tree plantings.
- Pole and fixture height not to exceed 20', and in scale with architecture. May require pole and fixture superimposed on architectural elevations.
- Fixture and pole style appropriate to architecture, neighborhood, and/or special district.
- High Pressure Sodium (HPS)** lighting used, or other source if demonstrated to be warm color (not **Metal Halide (MH)**).
- Area lighting uses **cut-off** or **full cut-off** fixtures with flat-glass lens (not "sag" or "drop" lens).
- Lamps do not exceed 400 watts for 16' to 20' high poles, or 250 watts for 12' to 16' poles.
- Lantern-type fixtures that are not **cut-off** or **full cut-off** have **shielding** if the lamp exceeds 3800 **lumens**. **HPS** lamp larger than 50 watts requires shielding. (See Appendix E, Comparison of Lamp Types and Lumen Outputs)
- Fixtures are fixed and not aimable.
- Evaluate project for unique site circumstances and potential for **glare**, **skyglow**, and **light trespass**.
- Plan sheets that contain Outdoor Lighting information have the required Compliance Statement per Appendix C, certifying that the plans conform.

# OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

## B. Plan Review Checklist - Parking Garages

- Foot-candle** plot.
  - Should have point-by-point foot-candles values arranged in a grid, and show illuminance at the transition zones (the area from vehicle and pedestrian entrances and exits, extending 60 feet into the building from the exterior face) and to the furthest floor area visible from the vehicle entrance or exit. Illuminance should not exceed the ambient streetlighting level at 10' feet beyond the vehicle entrance or exit. A plot of "contour lines" of equal light levels is not an acceptable substitute.
  - Should have chart or text block showing:
    - Minimum foot-candles
    - Average foot-candles –
      - Design light level target is 1 fc, check to see it doesn't exceed 1.5 fc
    - Maximum foot-candles
    - Uniformity ratio (maximum fc to minimum fc)
  - Plans have lighting controls as required by Title 24 Lighting Standards, and as required to provide for daytime and nighttime illumination levels.
- Plans show transition zone (the area from vehicle and pedestrian entrances and exits, extending 60 feet into the building from the exterior face):
  - Designed to provide for separate daytime and nighttime illumination levels.
  - Fixtures recessed or screened from view.
  - Directed task lighting preferred over general illumination.
  - HPS** or **fluorescent** lamps recommended, **MH** not allowed.
  - Plans have cross-sections or details to demonstrate screening of fixtures.
- Garage interior beyond transition zone:
  - HPS** or **fluorescent** lamps recommended, **MH** allowed if walls are warm color (not white).
  - Fixtures recessed, screened from view, or **cut-off**. **Cut-off** fixtures have horizontal lamp and no "sag" or "drop" lenses.
  - If more than one garage level above grade, **glare** and **light trespass** from interior fixtures controlled by appropriate fixture type and/or placement relative to openings in exterior walls.
- If parking garage with roof level parking:
  - Must be **full cut-off** fixtures.
  - Minimize pole height, minimize illumination level, and avoid placement of poles at building perimeter.
  - MH** lamps not allowed on roof.
  - Fixture and pole style appropriate to architecture, neighborhood, and/or special district.
- Plan sheets that contain Parking Garage Lighting information have the required Compliance Statement per Appendix C, certifying that the plans conform.

# OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

## C. Plan Review Checklist - Service Stations, Auto Dealerships, and Exterior Sales Areas

- Foot-candle plot** unless expansion, replacement, or renovation of existing project, and deemed by City Staff and Design Review Board to be minor in nature.
  - Should have point-by-point foot-candles values arranged in a grid, and should cover the project site and extend 20' beyond property line. A plot of "contour lines" of equal light levels is not an acceptable substitute.
  - Should have chart or text block showing:
    - Minimum foot-candles
    - Average foot-candles
      - For service station canopies, design light level target at ground level is 40 fc, check to see that it doesn't exceed 60 fc
    - Maximum foot-candles
      - For auto dealerships
        - At Calle Real/Hitchcock/Hope Ave., check that maximum at ground level doesn't exceed 70 fc
        - All other areas in City, check that maximum at ground level doesn't exceed 30 fc
  - The above calculations for minimum, average, and maximum foot-candles and uniformity ratio are based on a statistical area that does not include points beyond property line or more than 1.5 pole heights measured horizontally from the base of pole. Includes all points within the pole field.
- Check to see that foot-candles values on plan roughly agree with info in text block above.
- Check to see that at 10' beyond the property line, foot-candles values don't exceed 0.1 (1/10) fc next to residential, or 0.2 (2/10) next to commercial.
- Plans have lighting controls as required by Title 24 Lighting Standards, specify off-time.
- Manufacturers' product sheets showing representation of fixture design, lamp type, wattage, and other pertinent information including color.
- Landscape plan to show pole locations to determine coordination of lighting with tree plantings.
- Pole and fixture height not to exceed 20', and be in scale with architecture. May require pole and fixture superimposed on architectural elevations.
- Fixture and pole style appropriate to architecture, neighborhood, and/or special district.
- For significant parking or traffic areas, see Checklist A.
- Area lighting uses ***cut-off*** or ***full cut-off*** fixtures with flat-glass lens (not "sag" or "drop" lens).
- Lamps do not exceed 400 watts for 16' to 20' high poles, or 250 watts for 12' to 16' poles.
- Lantern-type fixtures that are not ***cut-off*** or ***full cut-off*** have ***shielding*** if the lamp exceeds 3800 ***lumens***. **HPS** lamp larger than 50 watts requires shielding. (See Appendix E, Comparison of Lamp Types and Lumen Outputs)
- Evaluate project for unique site circumstances and potential for ***glare***, ***skyglow***, and ***light trespass***. Lighting levels should be appropriate for the ambiance of the surrounding neighborhood.
- Plan sheets that contain Outdoor Lighting information have the required Compliance Statement per Appendix C, certifying that the plans conform.

## OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

### Plan Review Checklist – Service Stations, Auto Dealerships, Sales, Cont'd.

#### **SPECIFIC TO SERVICE STATIONS:**

- Often designed with intent to be brighter than other nearby stations to compete for attention, which is inconsistent with the intent of these Guidelines.
- Canopy over pumps is of particular concern. Check that fixtures have flat glass lenses and not "sag" or "drop" lenses. If underside of canopy slopes, fixtures must be of a type or installed so that their light is directed vertically down.
- HPS** lighting most appropriate for parking and traffic areas, **MH** for canopy.

#### **SPECIFIC TO AUTOMOBILE DEALERSHIPS:**

- Often designed with intent to be brighter than other nearby dealerships to compete for attention, which is inconsistent with the intent of these Guidelines.
  - Fixtures with adjustable aiming angle or especially low mounting heights are discouraged. They can be used to compete for attention by being aimed to reflect brightness from windshields, and create problems with **glare** and **skyglow**.
  - Fixtures installed at ground level to uplight displays are not allowed.
-

## OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

### D., E., F. Plan Review Checklist - Landscape, Hardscape, and Building Lighting; Security Lighting; Automatic Teller Machines (ATMs)

Plan sheets that contain Outdoor Lighting information have the required Compliance Statement per Appendix C, certifying that the plans conform to the Outdoor Lighting Ordinance and Outdoor Lighting Design Guidelines.

#### **SPECIFIC TO LANDSCAPE LIGHTING:**

Nearly all light sources have applicability for landscape lighting. MR-16 halogen floods and spots are most common. Other types should be evaluated for appropriateness and intensity.

Check to see that landscape lighting is **shielded** by architectural or landscape elements to avoid view of the source.

Uplighting should not be overdone, and is most effective when limited to a few landscape elements.

Landscape plan to show fixture locations to determine coordination of lighting with trees and plants.

Manufacturers' product sheets showing representation of fixture design, lamp type, wattage, and other pertinent information including color.

#### **SPECIFIC TO HARDSCAPE LIGHTING:**

Check to see that lighting intensity of path lights, bollards, and post-top lights is the minimum necessary for the intended purpose.

For bollards and post-top lights, **HPS** or **fluorescent** are preferred for walkways and open areas. For compact fluorescent, check that color temperature is specified. Preferred color temperature is 2700-3000°K.

Check to see that fixtures and placement are designed to avoid **glare**, **light trespass**, and **skyglow**.

Fixture and pole style for area lighting appropriate to architecture, neighborhood, and/or special district.

Check that lamps in fixtures where the lamp is not **shielded** don't exceed a maximum of 2700 **lumens** per fixture in commercial zones and 1200 **lumens** in residential zones. (See Appendix E, Comparison of Lamp Types and Lumen Outputs)

Manufacturers' product sheets showing representation of fixture design, lamp type, wattage, and other pertinent information including color.

#### **SPECIFIC TO BUILDING LIGHTING & AUTOMATIC TELLER MACHINES (ATMs):**

Check to see that lighting intensity of fixtures mounted to building surfaces, downlighting, and fixtures aimed at the building is the minimum necessary for the intended purpose.

**HPS** and **fluorescent** lighting are preferred. Care should be taken with **MH** to avoid **glare**.

Fixtures in which the lamp is not **shielded**, such as **lanterns**, should be low intensity to avoid **glare**, and should generally be used for decorative and local lighting, and not for area lighting.

## OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

### **Plan Review Checklist - Landscape, Hardscape, and Building Lighting; Security Lighting; Automatic Teller Machines (ATMs), Cont'd.**

- Check that lamps in fixtures where the lamp is not **shielded** don't exceed a maximum of 2700 **lumens** per fixture in commercial zones and 1200 **lumens** in residential zones. (See Appendix E, Comparison of Lamp Types and Lumen Outputs)
  - Check that, regardless of light output, lantern-type fixtures conceal view of compact fluorescent lamps that do not have a traditional "light bulb" shape, especially in **El Pueblo Viejo**. This may be accomplished by patterned or translucent glass in the fixture enclosure, or internal diffusers.
  - For compact fluorescent, check that color temperature is specified. Preferred color temperature is 2700-3000°K.
  - For ATMs, use existing ambient light if possible (such as streetlights or wall fixtures) and supplement with minimum necessary additional light. Conceal added lighting with awning or building architecture. Limit internally illuminated graphics to info panels. Avoid **glare**.
  - Lighting of building facades should be considered for appropriateness to the ambiance of Santa Barbara, and should be subtle.
  - Manufacturers' product sheets showing representation of fixture design, lamp type, wattage, and other pertinent information including color.
- SPECIFIC TO SECURITY LIGHTING:**
- Floodlights aimed toward adjacent properties or streets are not allowed.
  - Floodlights include "wall packs", "barn lights", and aimable fixtures.
  - Security lighting should confine illumination to the subject property.

## OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

### G. Plan Review Checklist - Sign Lighting

- Existing lighting: Check to see if existing lighting is evident from photographs; check City files for permits; otherwise review as new lighting or specify to be removed
- Ground Signs – Externally Illuminated:
  - Compact **fluorescent** and linear **fluorescent** are appropriate sources for external illumination. As a rough guide, look for 10-20 watts per linear foot of sign width, depending on sign height. Fluorescent lamps should not be HO (high output) or VHO (very high output) types.
  - Small halogen floods (MR-16, PAR-20, PAR-30) may also be used. Floodlight fixtures that accept PAR-38 lamps are not acceptable. **Title 24** limits **incandescent** to 2.3 watts/sf of sign area, so in order to be in compliance, a 6' x 4' ground sign would only be allowed 55 watts per face.
  - Check that fixtures are located such that they will be screened by landscaping and not cause **glare**.
- Ground Signs – Internally Illuminated:
  - Check that **fluorescent** lamps are not HO (high output) or VHO (very high output) types. Cabinet depth should be minimum practical.
  - Check that sign background is opaque if lighter colors, or limits light transmission for darker colors.
  - Not allowed in **EPV**.
- Wall Signs and Hanging Signs – Externally Illuminated:
  - Check that exposed fixtures used for wall signs are appropriate to the architecture; or are small, unobtrusive, and painted building color.
  - For **fluorescent**, check that color temperature is specified. Preferred color temperature is 2700-3500°K.
  - Small halogen floods (MR-16, PAR-20, PAR-30) may also be used. Floodlight fixtures that accept PAR-38 lamps are not acceptable. **Title 24** limits **incandescent** to 2.3 watts/sf of sign area, so in order to be in compliance, a 4' x 2' sign would be limited to 20 watts.
  - Check that proposed lighting location will not present **glare** problem.
  - Consider existing ambient light from streetlights or building lighting in determining appropriate sign illumination.
  - Exposed conduits on walls are not allowed.
  - Lighting fixtures mounted on roofs are not allowed.

## OUTDOOR LIGHTING & STREETLIGHTING DESIGN GUIDELINES

### Plan Review Checklist - Sign Lighting, Cont'd.

- Wall Signs – Internally Illuminated:
    - Cabinet signs discouraged, not allowed in **EPV**.
    - “Pan channel” letters with illuminated faces should have least intensity needed and should be least depth necessary for light source used (neon or **LED**). Must be individually mounted to building and not on “raceway”, unless incorporated into sign as design element. Not allowed in **EPV**.
    - Halo-lit letters should have least intensity needed and should be least depth necessary for light source used (neon or **LED**). Check light source color, warm white illumination preferred, especially in **EPV**. Must be individually mounted to building and not on “raceway”, unless incorporated into sign as design element.
  - Automatic Teller Machines (ATMs): See specific Guidelines checklist.
-