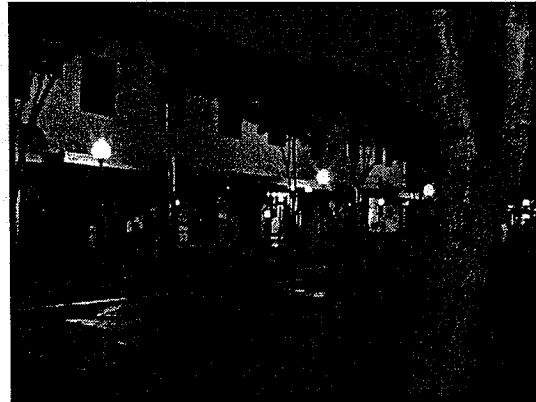
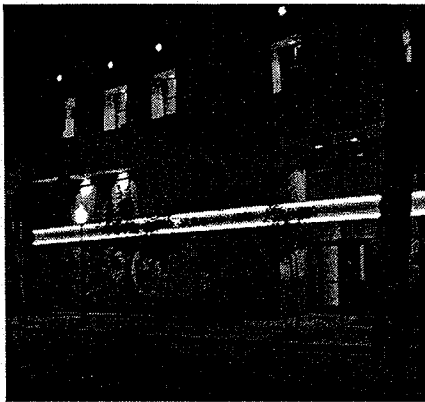


DOWNTOWN LIGHTING GUIDELINES



**THE CITY OF MERCED REDEVELOPMENT AGENCY
678 W. 18TH STREET
MERCED, CA**

ADOPTED: NOVEMBER 20, 2000



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PURPOSE

One of the goals of the Lighting Strategy, adopted by the Merced City Council on November 21, 2000, is:

Develop guidelines for streets, parking lots, alleys, and public walkways.

The associated Action Step for this goal is:

The City shall establish lighting guidelines applicable to all streets, alleys, and walkways, describing desirable lighting methods for each type of environment.

These guidelines are intended for use in evaluating development proposals, whether by Design Review Commission, Planning Commission, or City staff.

The reason for developing guidelines is to assist the public and private sector in making sound lighting design choices. The content of the guidelines reflects solutions based on first-hand observations of the current lighting situation downtown, and research into methods of improving the lighting environment. It is recognized that a combination of different light sources is necessary in accomplishing a quality nighttime atmosphere. This means that in many cases, the cooperation and sound regulation of private development is necessary. These guidelines are intended to encourage public agencies and private businesses to consider the nighttime environment and ways in which they can enhance the illumination of Merced's public spaces.

In order for people to feel *safe* and *secure* in the nighttime environment, streets, alleys and parking lots must be properly illuminated. Whenever automobiles and pedestrians share the same space, safe nighttime environment means being able to clearly identify one's surroundings. On sidewalks and in walkways where buildings frame narrow public spaces, good lighting is necessary to see changes in grade, unexpected obstacles and other persons in the area. Furthermore, vandalism is less likely to occur in commercial areas that are well lit.

Lighting also helps create a *decorative*, interesting environment. Adding lights to buildings, landscaping, public art, and historical features captures attention. Lighting provides new opportunities to recreate downtown Merced, consistent with overall City strategies for downtown development.

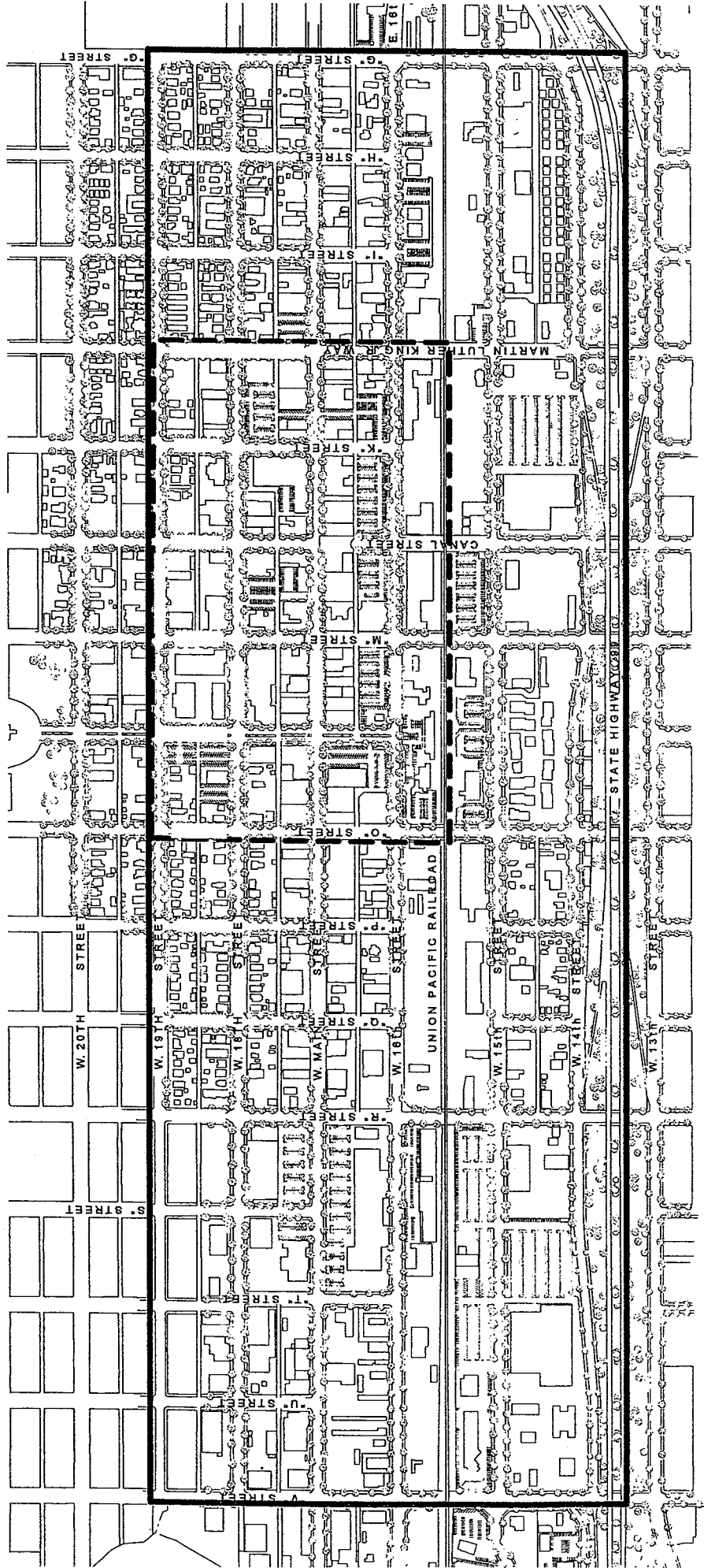
DOWNTOWN LIGHTING AREAS

These guidelines distinguish two areas downtown, the City Center and Expanded Retail/Residential. The map on the following page (Map1) illustrates the boundaries of these areas. The City Center is a dense, pedestrian-oriented mixed-use area, where nighttime activity is expected to increase most dramatically. Entertainment opportunities are experiencing rapid growth. Mainplace Merced, Merced's multi-screen theater project, will bring many visitors to the City Center on the weekends, as well as substantially increasing the number of visitors during the week. There are a variety of dining establishments and clubs downtown, with additional restaurants, ice cream parlors, and coffee shops either in construction or in the planning stages. Adding festive lighting will create an environment that supports this entertainment and feels safe to the pedestrian.

The area surrounding the City Center is designated *Expanded Retail/Residential*. Businesses here are primarily automobile-oriented. However, segments of this area, particularly along Main Street, do experience a fair amount of pedestrian activity, and this rate is expected to increase as new development in the City Center takes place. Some of the residential neighborhoods in this area are among the oldest in Merced and the antique lampposts found here should be replicated to preserve the area's ambiance.

Another significant area for consideration of improved lighting in the Expanded Retail/Residential Area is Martin Luther King Jr. Way (MLK) between Highway 99 and 16th Street. This is a major gateway to the City Center, and should be highlighted in a welcoming manner.

Downtown Merced Lighting Areas



Map 1



// City Center

□ Expanded Retail/Residential

LIGHTING FACTORS

Light Quality

A well-planned lighting design must consider the results obtained from different types of lamps and fixtures. Some of the factors involved in this decision are light intensity, glare, color, and skyglow, or the amount of light that escapes into the night sky.

The *intensity* of light radiating from one area may effect another area. For example, a brightly-lit business such as a gas station, may draw attention away from an adjacent property where a historical building is located (Figure 1). Furthermore, intensely lit signs, as well as misdirected floodlights and unshielded light fixtures cause *glare*. This can result in accidents and injury to drivers and pedestrians, and is therefore a very important consideration. Unshielded light fixtures also contribute to *skyglow*, which is the escaping of light into the night sky, obscuring the natural starlit scene.

Another factor to consider in selecting lamps is light *color*. High pressure sodium lamps are more energy efficient than metal halide lamps, but sodium lamps emit a yellow color, which has poorer color-identification qualities than the metal halide's white light. A pedestrian will generally feel safer when they can accurately identify their surroundings, therefore careful planning based on economy and need is required. Current research leads to another consideration related to the color of light. Initial findings indicate that the blue-green portion in the spectrum of light, found to a much greater degree in metal halide lamps, provides greater peripheral vision, particularly at low light levels. This becomes an important factor in choosing lights for parking lots and streets.

Figure 1. Overlighting may detract from a nearby historical feature

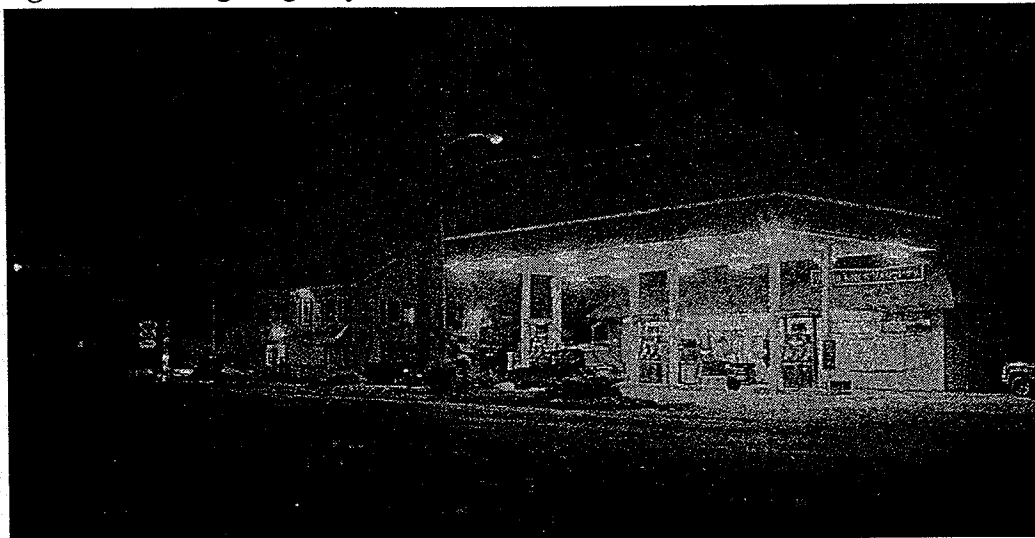
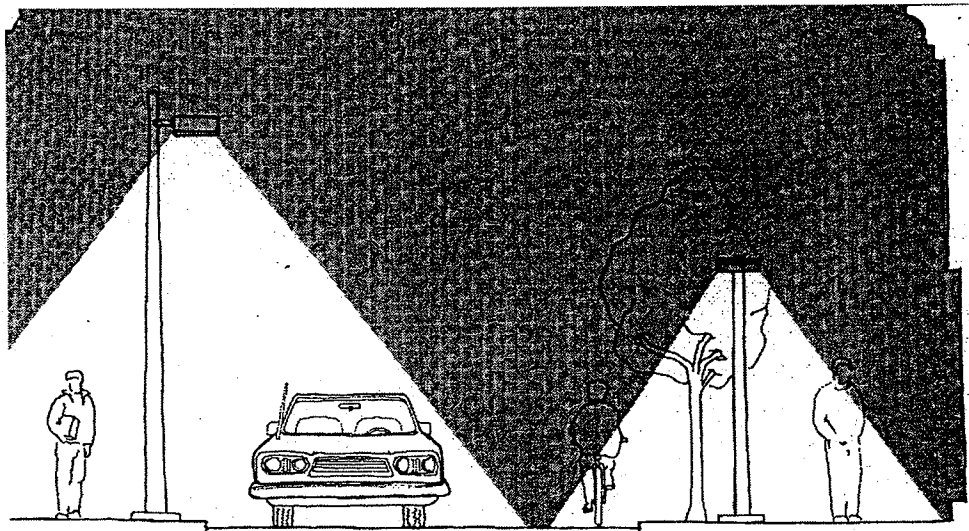


Photo by Gary Clayton Hall. *Outdoor Lighting Manual for Vermont Municipalities*.

Post Heights

Post heights should be determined based on the scale and predominant activity of the surrounding area. Lights on 20-30 foot posts create a high "ceiling" that shapes a large outdoor space, giving it a grand scale. A large space can be lit more efficiently and evenly with high wattage lamps on fewer tall posts. Lights on lower posts (10-15 feet) create a more intimately lighted space that is comfortable for pedestrians (Figure 2). In this case, lamp wattage is lowered and posts are spaced closer together.

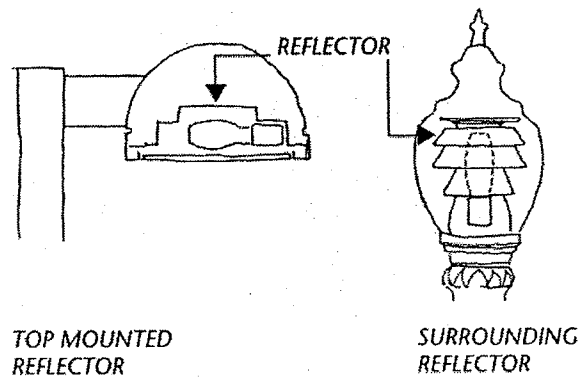
Figure 2. Proper post height is dependent upon use. Generally, height should be 10 to 15 feet for pedestrian areas, 20 to 30 feet tall when serving vehicular traffic.



Cut-Off Shields & Reflectors

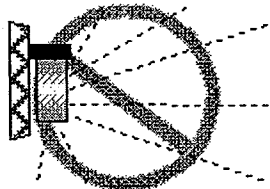
All lampposts over 10 feet in height should include cut-off type fixtures (Figure 2) or fixtures that incorporate reflectors (Figure 3) to direct light downward onto the surface where it is needed.

Figure 3.
Internal Reflectors

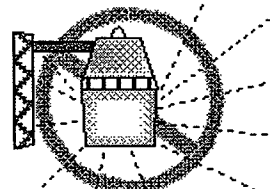


EXAMPLES OF POOR AND GOOD LIGHTING FIXTURES

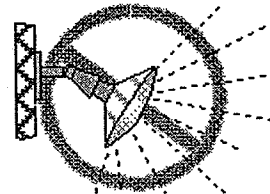
POOR



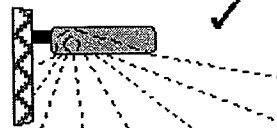
Typical "Wall Pack"



Typical "Yard Light"



GOOD



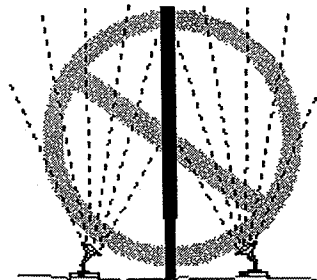
Typical "Shoe Box" (forward throw)



Opaque Reflector (lamp inside)

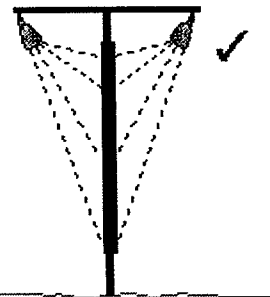


POOR

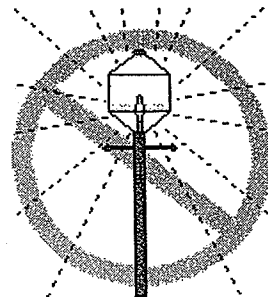


Ground-mounted
Billboard Floodlights

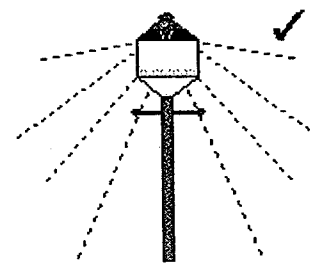
GOOD



Top-mounted
Billboard Floodlights
(carefully focused onto billboard)



Post-style Lamp
(more than 1,800 lumens)

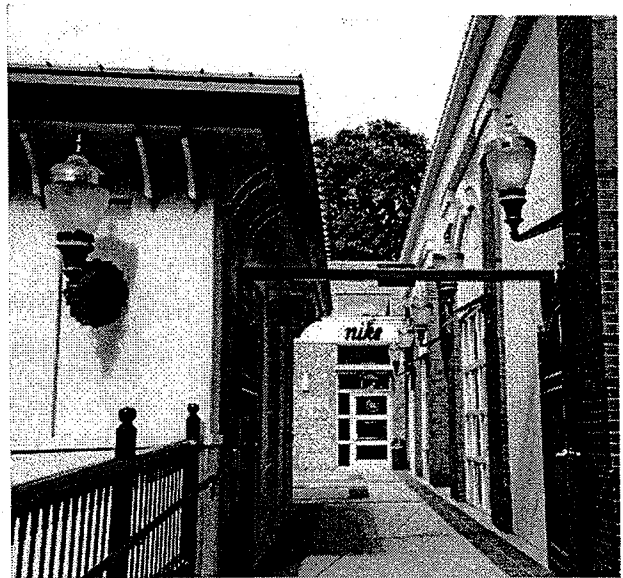
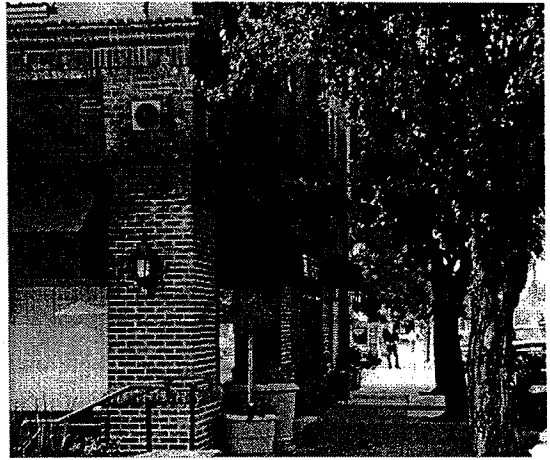


Post-style Lamp
(lamp set in opaque top)

EXAMPLES OF LIGHTING STYLES

Building Fixtures

The following pictures show various styles of building lights. Selection should be based on an awareness of the preceding *Lighting Factors*, as well as building architecture and cost of the fixture. An additional element to be considered when determining light intensity is the color of the building where it will be installed. Lighter colors will reflect light, increasing its intensity, while darker colors may require higher wattage to compensate for this deficiency.

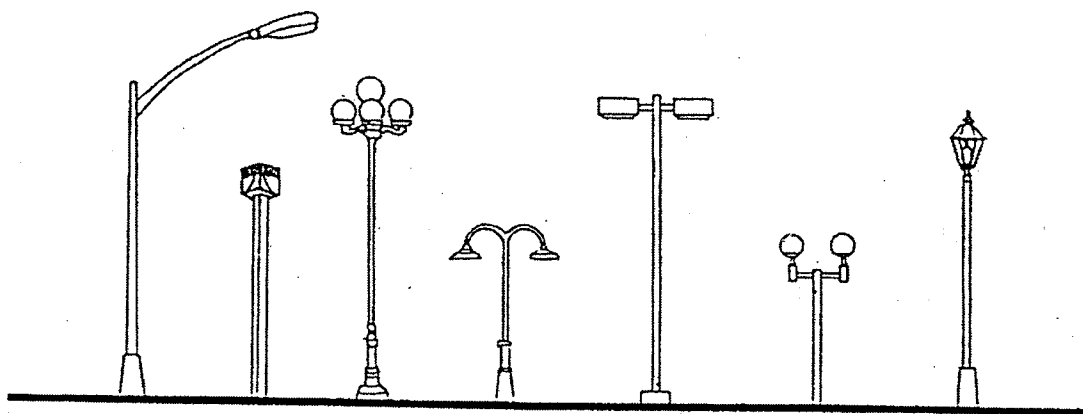


Lampposts

Streetlights installed on public property must follow established standards. The antique post and fixture on local and collector streets in the Downtown Lighting Area (below) is the standard for these streets.

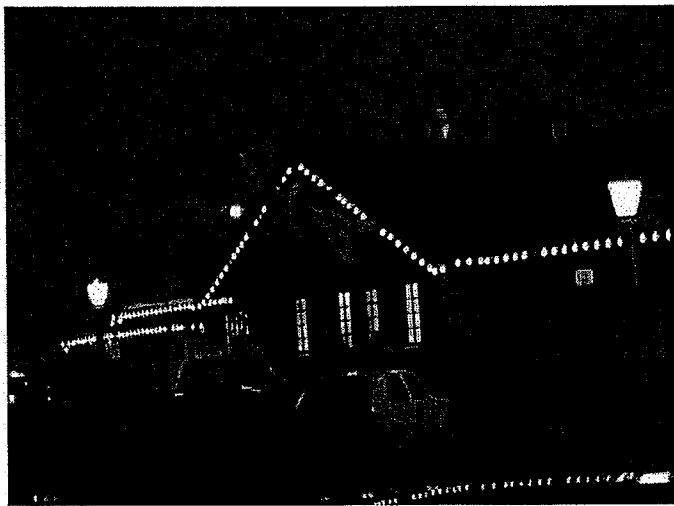


However, lights installed on private property may take on a variety of styles. A guideline to follow in selecting lampposts is that the character of the design should be consistent with the image of the area to be illuminated. Some examples of available styles are shown below.



Lighted Signs

Illuminated signs promote businesses and add to the overall lighting environment. Signs can be lit in various ways including indirect lighting, internal lighting, and by using neon lights as shown here.



Architectural Lighting

Stringing small white lights on building parapets gives this building a festive appearance.

A Complete Lighting Design

Building lights and neon signage in addition to the street lamppost provides adequate lighting and a visually interesting façade to the Multicultural Arts Center.



Lighted Storefronts

Lighted storefronts promote businesses and play a large role in increasing the illumination of sidewalks, making them feel safe to the nighttime visitor. Streetlights alone can not fulfill this task, especially on streets where many of the buildings have awnings.



Additionally, light colored awnings reflect light, adding to its intensity. Light fixtures can be placed on the underside of awnings, or the light source may come from inside the business as shown here.

Downtown Lighting Guidelines

1.0 General Guidelines

- 1.1 Shatterproof or vandal resistant coverings are recommended for low-level lighting where there is danger of breakage.
- 1.2 Lighting systems should be energy efficient.
- 1.3 The height of luminaries should be in scale with the setting.
- 1.4 All United States flags shall be spotlighted during nighttime hours.
- 1.5 Lighting should not intrude on adjacent property or cause glare into drivers' eyes.
- 1.6 Lighting for pedestrian movement should illuminate changes in grade and other areas along paths, which, if left unlit, would cause the user to feel insecure.
- 1.7 Ground level lights, such as flood and spotlights directed on buildings or landscaping, should be baffled or directed so as not to shine in the eyes of pedestrians on adjacent walkways or on persons inside the building.
- 1.8 Any light sources over 10 feet high should incorporate a cut-off shield to prevent light spill.
- 1.9 Service area lighting should be contained within the service yard boundaries and enclosure walls.
- 1.10 As a rule, the light source should be kept as low to the ground as possible while ensuring safe and functional levels of illumination.
- 1.11 Use of colored lens may be accepted with approval by staff and/or the Design Review Commission if the color adds a valid architectural feature.

2.0 Building Lighting

- 2.1 Encourage illuminated identification signs for commercial buildings.
- 2.2 Encourage the placement of lights on existing buildings in alleys and walkways.
- 2.3 As a condition of plan approval, exterior lighting of building façades is required on new construction and exterior remodels to create a pleasant and safe nighttime environment.

2.31 Lighting approved in lighting plans shall be maintained in working order.

- (a) Site plans and architectural plans shall include location of light fixtures, their design, and the intensity and quality of the illumination they will provide.
- (b) The Design Review Commission (DRC) and staff review shall analyze building color and material samples for nighttime as well as daytime appearance.
- (c) The DRC or its appointed designee shall approve lighting plans.

2.4 All approved projects of the Façade Rebate and Commercial Rehabilitation Loan Programs shall include acceptable exterior lighting plans.

2.5 Buildings with awnings over walkways should incorporate lighting beneath the awning level. This may include storefront building lighting.

2.6 Buildings with frontages on alleys, public walkways, and public lots should be flagged in the Development Services Department records for review on any permit.

3.0 Additional Standards, City Center

3.1 Encourage the spotlighting of selected historical buildings and public art to add visual interest.

3.2 Encourage perimeter lighting at the tops of buildings to accentuate architectural detail.

3.3 Encourage the illumination of storefronts within the City Center from dusk to midnight.

3.4 Site lighting, parking lot lighting and street lighting shall use fixtures consistent with antique lampposts on Main and Canal Streets.

4.0 Streets, Parking Lots, Alleys, and Walkways

4.1 Lampposts shall be located in such a manner that they will not become safety hazards to pedestrians or vehicles.

4.2 The City shall develop standards for the following downtown areas:

- (a) City Center arterial streets,
- (b) City Center local or collector streets,
- (c) Expanded Retail Area,
- (d) Expanded Retail Area (residential areas).

4.3 The City shall place lights on the alley side of existing buildings, where practical, by easement agreement with building owners. Such lighting shall be part of the street lighting grid and costs of operating these lights shall be appropriated from the City's General Fund.

5.0 Prohibited Lights

5.1 No outdoor lights should be permitted which blink, flash, or change intensity, except in the case of specially permitted freeway-oriented signage, which shall meet the California Department of Transportation standards.

5.2 The arbitrary lighting of building facades and roofs should be prohibited.