

# SAN DIEGO DOWNTOWN LIGHTING PLAN



 Centre City  
Development  
Corporation

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ADOPTED BY THE CENTRE CITY DEVELOPMENT CORPORATION  
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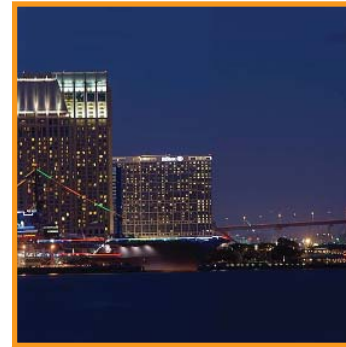
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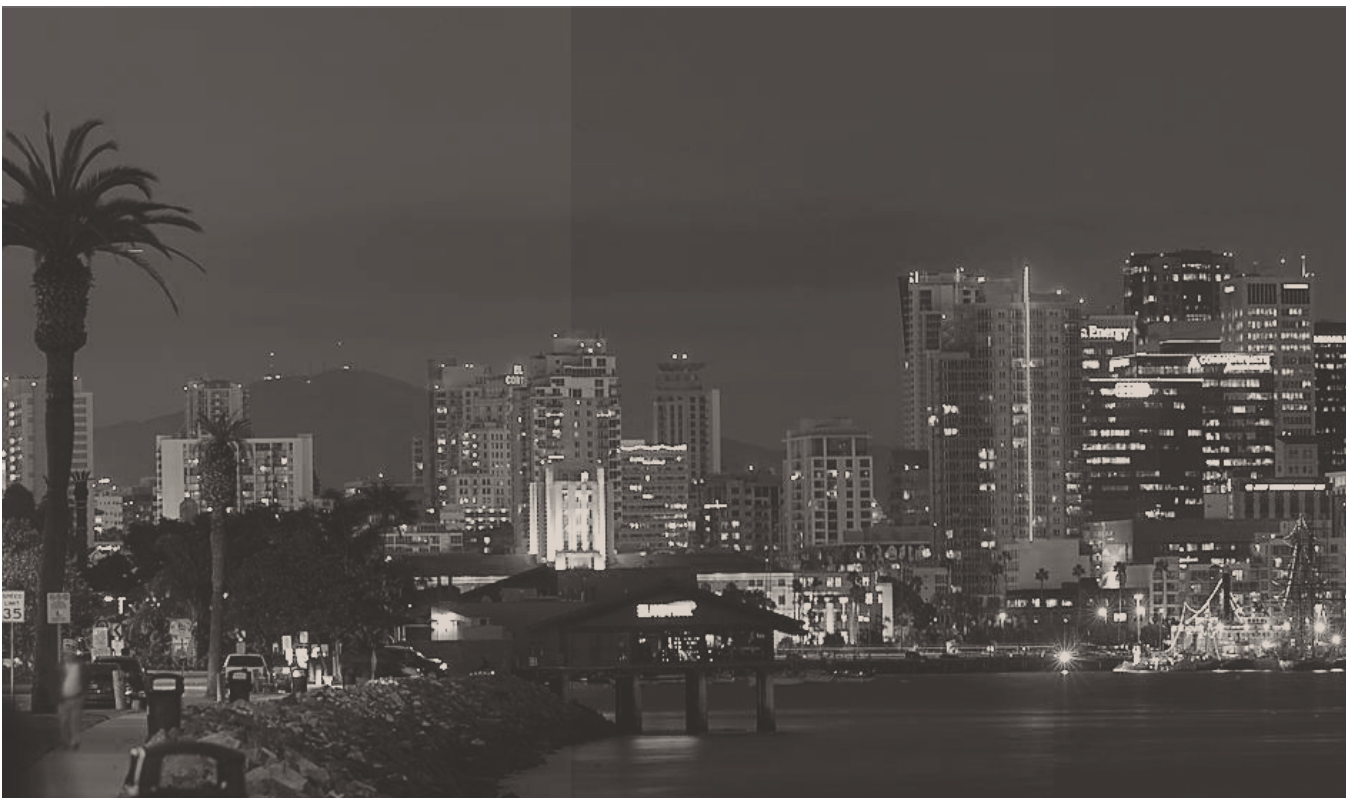
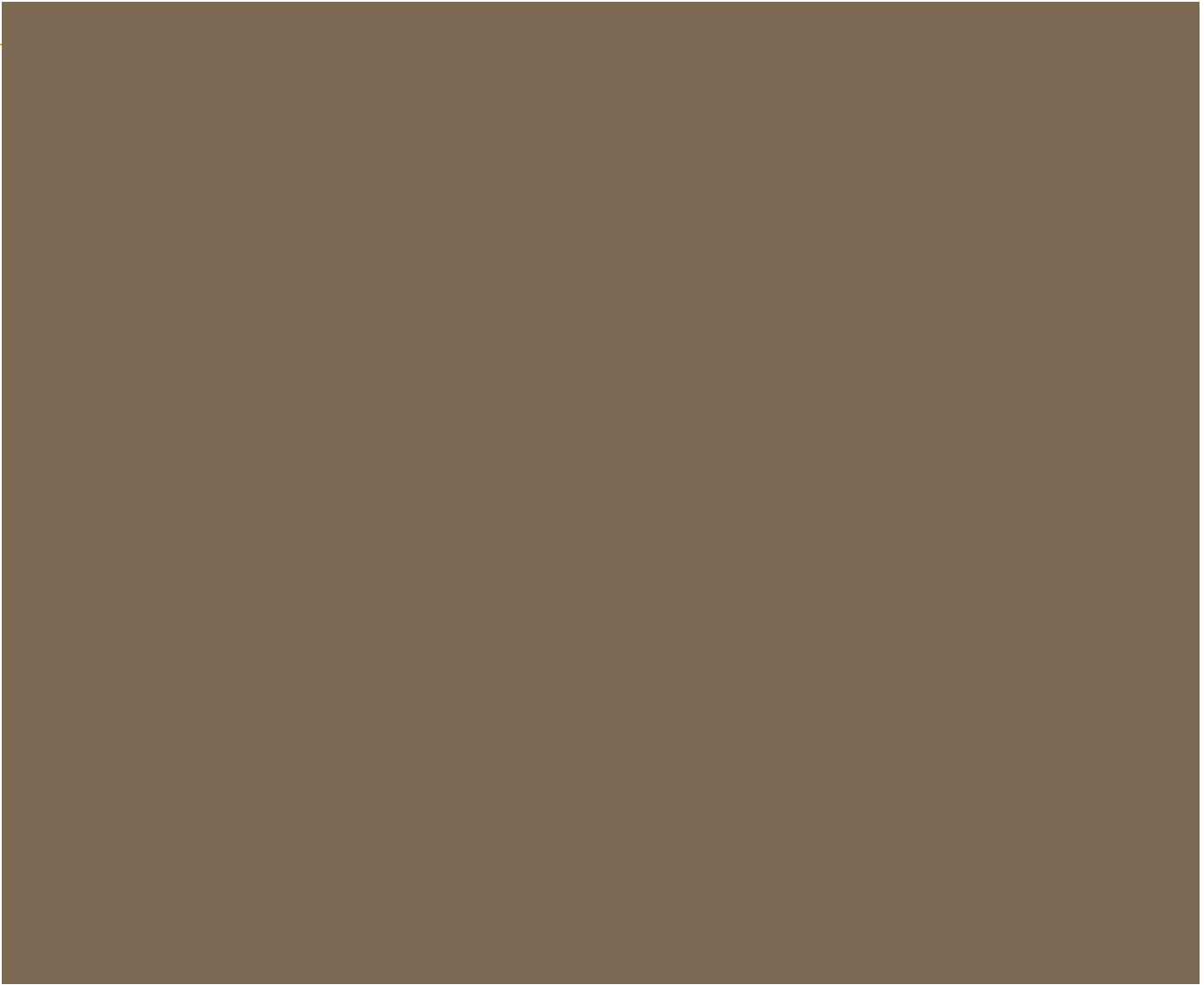
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**SAN DIEGO DOWNTOWN LIGHTING PLAN**

# EXECUTIVE SUMMARY



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## 1.0 EXECUTIVE SUMMARY

The Downtown Lighting Plan (“Lighting Plan”) implements the goals and policies in the Downtown Community Plan (DCP) and downtown planned district ordinances (PDO’s) by defining design guidelines and procedures for lighting of buildings and outdoor spaces. The Lighting Plan provides guidance for public officials, City of San Diego (“City”) staff, residents, property owners, developers, architects and designers wishing to invest in exterior lighting as a way of adding interest, celebration of place, beautification, energy savings and value to property.

Although the DCP and PDOs are the guiding regulatory planning documents for downtown, the Lighting Plan is an advisory document to be used as the basis for design review of private development projects and public work projects by the Centre City Development Corporation (CCDC). The intention of the Lighting Plan is to provide a more effective lighting policy for downtown that emphasizes energy efficiency and reduction in light pollution and glare.

The Lighting Plan has four purposes:

1. Serves as a companion to the DCP, the downtown PDOs and the Downtown Design Guidelines.

Complementing the policies in the DCP, quantified development standards defined in the PDOs, and design standards defined in the Downtown Design Guidelines, the Lighting Plan proposes long-range lighting goals that support the DCP’s build-out to enhance the overall nighttime image and profile of the downtown San Diego’s skyline. The Lighting Plan reinforces the Downtown Design Guidelines with added lighting guidelines to emphasize each neighborhood’s unique identity and enhance its nighttime “sense of place.”

2. Provides exterior lighting guidelines for downtown neighborhoods, buildings, streetscapes, parks and

other aspects of the public realm, incorporating Backlight Uplight and Glare (BUG) ratings and luminance values to minimize light pollution and glare.

The Lighting Plan provides a “toolbox of ideas” for the applicant that includes design guidelines coupled with “best practice” photos along with lighting techniques that demonstrate how to highlight architectural composition of buildings, while minimizing light pollution and glare, as described in Chapter 3.

3. Identifies incentives for property owners that invest in energy efficient lighting.

The Lighting Plan describes SDG&E® rebate programs that reward indoor energy efficiency, as outlined in Chapter 5.

Chapter 4 describes the exterior lighting incentives per neighborhood that earns points towards Centre City Green’s Floor Area Ratio (FAR) Bonus Program. Centre City Green’s Green Building Incentive Program describes the submission procedures. Additional information can be found in Appendix 8.5. Exterior Lighting Incentive explanation.

4. Updates the Streetscape Manual with Energy Efficient Mid-Block Luminaires

The Lighting Plan provides guidance for the next update to the Centre City Streetscape Manual and the transition from the current high pressure sodium mid-block streetlights to more energy efficient broad spectrum luminaires.

# 1.1 THE PLANNING PROCESS

The Lighting Plan was developed by CCDC in conjunction with a consultant team lead by Tucker Sadler Architects, and included Horton Lees Brogden Lighting Design, Syska Hennessy Group and Wade Communications.

The team addressed issues of: energy efficiency, nighttime safety and the visual impact (with subsequent economic benefits) of well-lighted buildings and public spaces. These issues provided the framework for design guidelines with near- and long-term goals that are intended to enhance the overall nighttime image, pedestrian experience, and skyline profile of downtown in a way which reflects how San Diegans live, work and play.

## Consistency with the Downtown Community Plan (DCP)

The DCP includes a framework of goals and policies which address energy efficiency, quality urban design objectives, public safety and the value of including public outreach in all planning efforts. Chapter 5 - Urban Design, p. 5-1 includes policies that address streetscape improvements which include exterior lighting, and Chapter 8 – Public Facilities/Amenities, p. 8-1 has a goal of considering public safety in the design of new development and public spaces. The Lighting Plan implements both the Urban Design and Public Facilities/Amenities Elements of the DCP.

## Relationship to Waterfront Plans

Downtown San Diego's waterfront is under the jurisdiction of the Unified Port of San Diego ("Port") and subject to the adopted Port Master Plan. Corresponding regulatory duties and proprietary responsibilities include the development, operation, maintenance, control, regulation, and management of the harbor, as well as the promotion of commerce, navigation, fisheries, and recreation. Any development on tidelands may be subject to permits from government agencies such as the Army Corps of Engineers, California

Coastal Commission, U.S. Department of Fish and Wildlife, and California Department of Fish and Game. The Lighting Plan provides lighting design guidelines to developments in these areas within the Centre City Redevelopment Project area.

## Relationship to the North Embarcadero Visionary Plan

The North Embarcadero Visionary Plan (NEVP) is the outcome of a unique association of government agencies with significant jurisdictional and/or ownership interests in the North Embarcadero area – CCDC, City, County of San Diego, Port, and the U.S. Navy. This cooperative venture originally implemented through a Memorandum of Understanding, and more recently in a Joint Powers Authority among CCDC, the Port, and the Agency, reflects the potential of the North Embarcadero as a bayfront district for the city and the region at large. NEVP addresses view corridors, public open space provision, parking, streetscape improvement, and the plan area's relationship to the rest of downtown. The Lighting Plan will defer proposed streetscape lighting design components to the NEVP that are within its project boundary, but shall provide supplementary lighting guidance to developments in these areas within the Downtown Community Plan area and NEVP project area.

# 1.2 PROJECT PURPOSE

## 1.2-1 Best Practice

A significant part of a city's economic viability depends on commercial activity after dark. A creative and dynamic lighting program, one with a well-defined framework, provides guidelines that can enhance the city's image, attract businesses, transform neighborhoods, and conserve energy.

With this in mind, CCDC developed the Lighting Plan to enhance downtown economically, physically and socially through artful and responsible lighting of public and private spaces.

CCDC and its consultants evaluated successful lighting programs in other major cities. After extensive research, analysis, and public engagement, three fundamental concepts emerged:

1. Well-lighted buildings and public places play a key role in economic growth,
2. energy efficiency saves money, and
3. nighttime lighting encourages public participation which, in turn, improves safety.

The Lighting Plan builds upon these findings.

#### Best Practices

The project team examined numerous well-lit cities that were identified in early stakeholder interviews as being particularly memorable. Ultimately, four cities—Liverpool, Singapore, Houston and Philadelphia, were studied and documented in Appendix 8.1: Best Practices.

Each city, as part of its redevelopment program, designed lighting to enhance the perception of pedestrian safety and promote the character of key districts. In addition, city officials reported that the collaboration between the public and private sectors was essential in achieving the desired visual results. Energy efficiency, light pollution reduction, and optimization of systems for reduced maintenance were also priorities in each program.

The Lighting Plan is based on the premise that more lighting is not necessarily better lighting. Effective lighting will highlight the composition of architecture, conserve energy when lighting is not required, and most importantly, provide for public safety.

The Lighting Plan promotes the redevelopment of downtown by enhancing the tourist market with lighting policies that support the activities of the Convention Center and the Gaslamp Quarter, while also defining emerging urban neighborhoods through goals, guidelines and initiatives.

## 1.2-2 Economics

Lighting has played a key role as an economic development tool. It enhances the profile of skylines and establishes major cities as attractive and inviting places to invest and live. Urban lighting plans focus on public spaces and buildings to create nighttime environments that support development of employment and residential opportunities and promote the energy of city nightscapes to tourists and visitors. Downtown San Diego's skyline is framed by the curvature of the waterfront in dramatic ways. The Lighting Plan has focused on how to best capitalize on this unique and attractive perspective by developing lighting design guidelines.

The Lighting Plan promotes greater flexibility of lighting treatments in areas with increased commercial activity, such as the Gaslamp Quarter, Petco Park and the Convention Center. Collectively, the Lighting Plan celebrates the unique character of each downtown neighborhood by focusing on the following Economic Goals:

- Enhance the nighttime image of San Diego to attract new business and conventions, and to draw local/regional visitors and national/international tourists to downtown.
- Emphasize the character of downtown neighborhoods, historic buildings, and the city's appealing skyline with near- and long-term goals and lighting guidelines.
- Encourage the installation of exterior lighting by developing a method of approving lighting proposals for existing and new buildings, and incorporating it into the CCDC design review process.
- Develop an approval process allowing temporary lighting installations for seasonal and special events.

### 1.2-3 Energy

The Lighting Plan provides a strategy to implement energy efficient lighting technologies for buildings and right-of-way improvements that minimize light pollution and glare.

#### Minimize Light Pollution Goals:

- Lighting techniques are described in Chapter 3 that provide illustrations on how to enhance the architectural composition of a building while minimizing light pollution. See Section 3.3 Lighting Techniques
- The BUG rating system, developed by the Illuminating Engineering Society (IES) and designed to minimize light pollution and glare, has been integrated as a reference with the neighborhood guidelines. (See Chapter 4 and Appendix 8.5 for background material).

#### Energy Efficiency Goals:

- Transition from high pressure sodium street light fixtures to new technologies can result in increased energy efficiency, and/or better maintenance economics, and/or a higher quality lighted environment. See Chapter 6 Mid-Block Streetlights for strategies.
- Use energy efficient lighting technologies, such as LED, for exterior lighting of buildings.
- Efficiencies can be achieved by managing the hours of operations of exterior lighting by reducing the amount of lighting after the hours of business operations (above the streetwall height).

### 1.2-4 Safety

Perception of safety was a common theme in many stakeholder interviews (See Appendix 8.3). The lighting of “dead streets” and dark “gaps” in downtown was identified as necessary to increase the quality of the pedestrian experience and improve safety. Many outreach interviews indicated that the removal of high pressure sodium “yellow light” in the Gaslamp Quar-

ter and its replacement with white light has increased the perception of safety due to the increased visual clarity. The Lighting Plan’s goals and recommendations for the rest of the public realm strive to provide greater visual clarity and safer, more pleasant evening walking experiences.

#### Safety Goals:

- Light sources with higher color rendering capabilities to provide improved visibility.
- Streetwall lighting that contributes to streets and open spaces for increased visibility
- Additional lighting throughout the public realm to address overall pedestrian orientation and safer walking experiences.
- Adding light does not necessarily increase safety. Proper luminaire selection and placement to improve contrast and reduce shadows will do much more to improve the perception of safety than just adding more light.



# HOW TO USE THIS DOCUMENT

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## 2.0 WHO SHOULD USE THE LIGHTING PLAN:

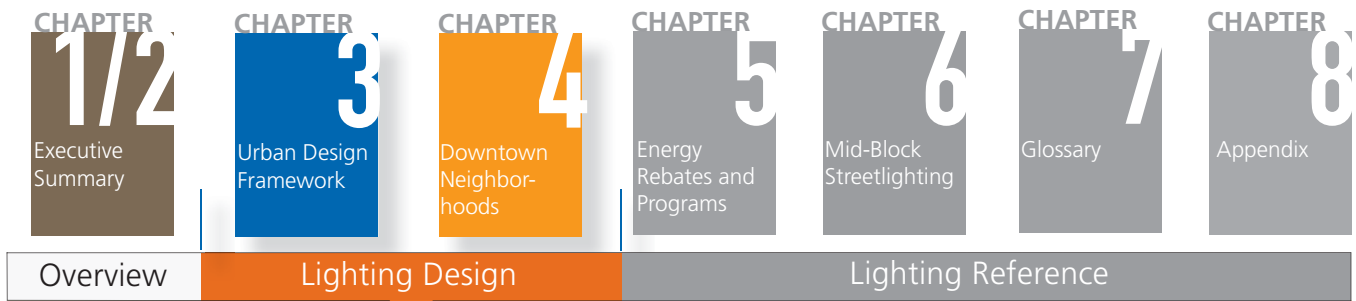
Those who are adding exterior lighting to their buildings should use the Lighting Plan as guidelines during the design review process.

## 2.1 IMPORTANT CONSIDERATIONS BEFORE USING THE LIGHTING PLAN:

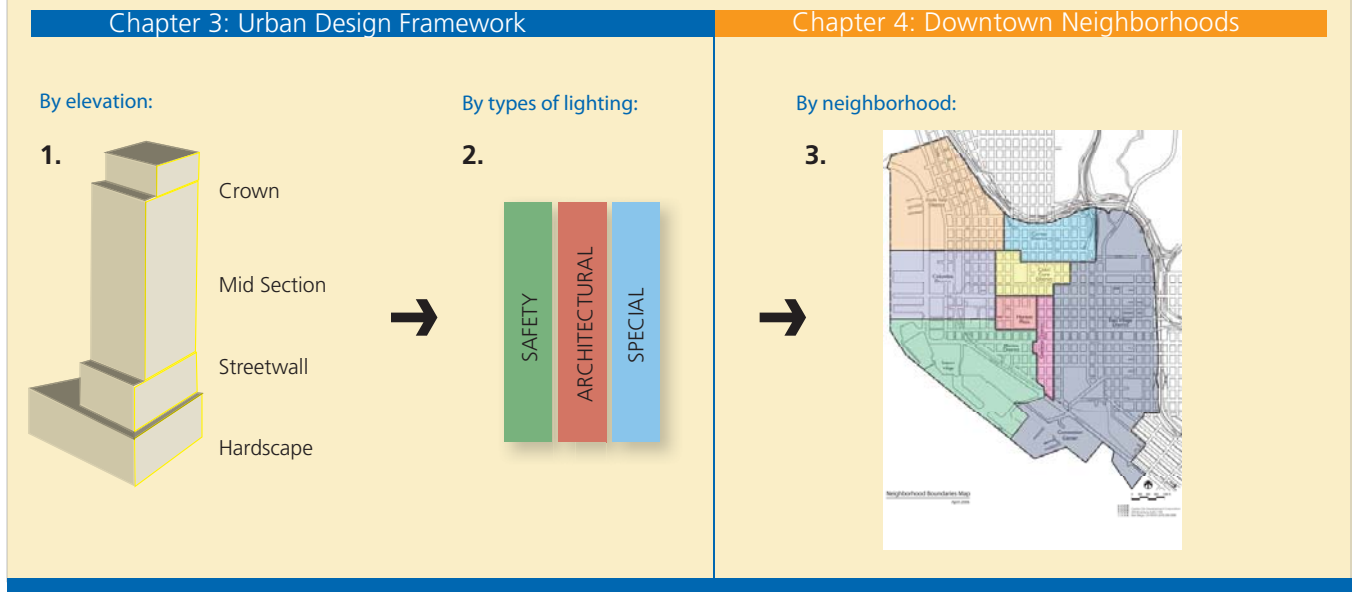
All outdoor lighting regulations (as it relates to light pollution and glare) are located in the California Green Building Standards (“CALGreen”), California Energy Commission Title-24 and the City of San Diego’s Lighting Ordinance:

- ▶ California Green Building Standards (“CALGreen”) - Section A5.106.08 Site Development specifically provides maximum allowable BUG Ratings for luminaires located on buildings and for outdoor areas.
- ▶ California Energy Commission Title-24 - California Energy Efficiency Standards, Non-Residential Compliance Manual Section 6.2.3 “Cut-Off Luminaires” limits the use of non-cut off luminaires for specific outdoor applications
- ▶ City of San Diego’s Lighting Ordinance, Section §142.0740 of the Land Development Code - regulates the installation of outdoor luminaires to minimize unnecessary illumination resulting in light trespass, glare, and urban sky glow, while also conserving electrical energy.

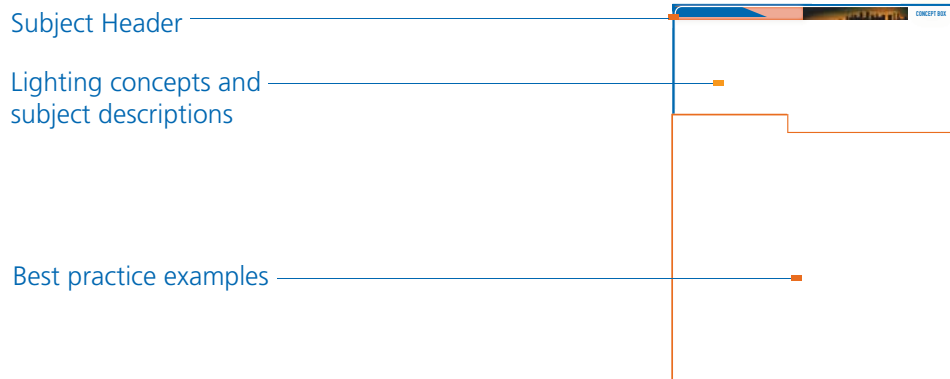
## 2.2 HOW THE LIGHTING PLAN IS ORGANIZED:



### How lighting design guidelines are presented:

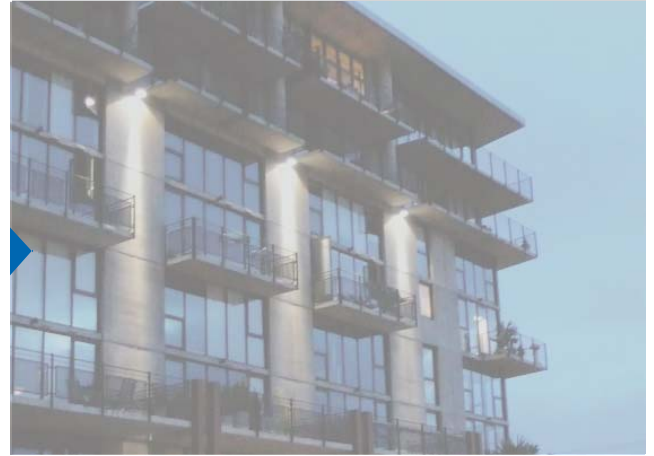
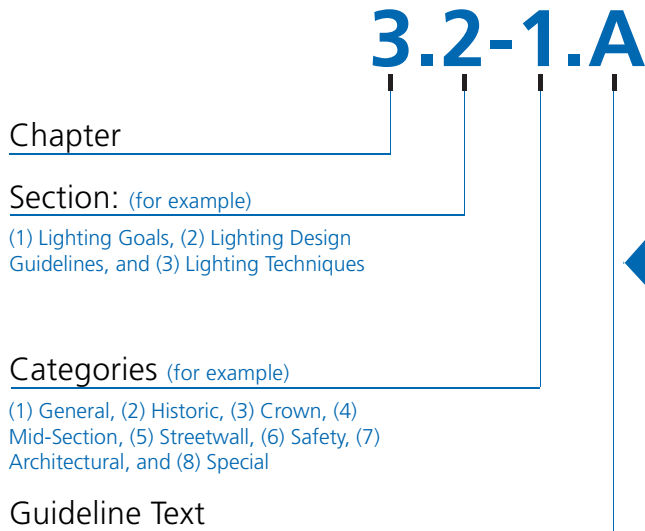


**The Concept Box:** Located throughout Chapters 3 and 4, the Concept Box provides best practice examples and lighting concepts for reference.





## How to read a guideline:



Photographic examples are provided as reference to the Lighting Guideline Text.

## Lighting Plan Chapter Summaries:

### Lighting Design



- (3.1) Long range lighting goals that support the goals and policies of the DCP;
- (3.2) lighting guidelines complemented with best practice photo references;
- (3.3) and lighting examples (that show both encouraged/discouraged styles), and “best practice” lighting techniques to enhance exterior lighting and minimize light pollution.



- (4.1) Types of Lighting description.
- (4.2-4.11) Downtown Neighborhoods: Long range lighting goals, concepts, photo references, design guidelines, BUG ratings per neighborhood; and incentives for Exterior Lighting reduction in wattage, see Chapter 5, Section 5.3 for explanation and Centre City Green - Green Building Incentive Program, for submission requirements.

SEE **APPENDIX 8.6** CHAPTER 4 EXPLANATION

## Lighting Plan Chapter Summaries: (Continued)

### Lighting Reference

#### CHAPTER

5

Energy Rebates and Programs

- (5.1) Available SDG&E rebate programs;
- (5.2) SDG&E Emerging Technologies Program, and
- (5.3) Energy Consumption Allowance Incentive Program

#### CHAPTER

6

Mid-Block Streetlighting

- (6.1) Strategy for transitioning from HPS to broad spectrum luminaires;
- (6.2) optical system explanation;
- (6.3-6.5) guidance for the next Centre City Streetscape Manual update with new mid-block street lights for various street types; and
- (6.6) pilot project overview.

#### CHAPTER

7

Glossary

- (7.1) Glossary for technical language and references; and
- (7.2) all photo references are provided in this chapter.

#### CHAPTER

8

Appendix

- Background materials used in the completion of the Downtown Lighting Plan includes:
- (8.1) Best practice summary of lighting policies from selected cities;
  - (8.2) summary of the public outreach;
  - (8.3) Stakeholder Report;
  - (8.4) summary of existing codes and planning issues;
  - (8.5) a description of Background Uplight and Glare (BUG) Rating System; and
  - (8.6) an explanation of Chapter 4.

# URBAN DESIGN FRAMEWORK

# 3

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LIGHTING CONCEPT

## Pulse of the City

*The “Pulse of the City,” our underlying lighting concept, represents an ever-changing atmosphere where lighting responds to activity levels in varied locations, reflecting the inherent “pulse” of Downtown San Diego.*

*Recognizing the dynamic lighting needs throughout our downtown districts and neighborhoods, this conceptual approach directly addresses the desire to optimize energy efficiency by providing light “energy and function” effectively where and when it is needed.*

*The resulting skyline is a kinetic expression of San Diego as an elite world city.*

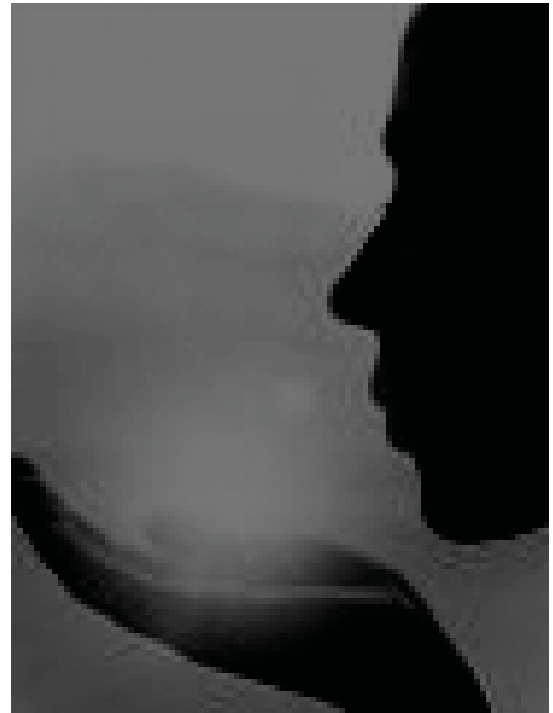


Figure 3.1: A city breathes...soft in respite....rapid in excitement, with a heartbeat in parallel.



Photo 3.1: The Weekday. Articulated building crowns. (Philadelphia, Pennsylvania)



Photo 3.2: The Weekday. Articulated building crowns. (Atlanta, Georgia)



Photo 3.3: The Weekend. The skyline becomes more active, reflecting the excitement of the end of the week. (Frankfurt, Germany)



Photo 3.4: The Special Event. An exciting skyline celebrates holidays and special events that are important to a community. (Frankfurt, Germany)



Figure 3.2: Lighting Framework Map



## 3.0 LIGHTING DOWNTOWN SAN DIEGO

### Intent Statement:

The Lighting Plan will promote an exciting and memorable nighttime experience of downtown San Diego.

### Overview:

Waterfront cities have unique opportunities to capitalize on their attractive natural resources. Case studies of the cities that were researched all concluded that lighting plays an active role in emphasizing the street network, activating walkways and parks along the water's edge, and complementing the lighting of buildings in the background.

Chapter 3 defines an Urban Design Framework for downtown San Diego and includes: (1) long-range lighting goals that support the DCP build-out, (2) lighting guidelines that are intended to enhance the architectural composition of buildings, and, (3) best practice lighting techniques that minimize light pollution and glare. These lighting goals, guidelines and techniques form the basis of an urban design framework for strategies (see Figure 3.2) that emphasize the waterfront, neighborhoods and the hierarchy of streets that orient and attract residents and visitors.



Photo 3.5: The downtown San Diego skyline



Photo 3.6: Little Italy sidewalk cafe.



Photo 3.7: The enormous potential of San Diego's night skyline.

# 3.1 DOWNTOWN LIGHTING GOALS

## GOAL#1 LIGHT THE SKYLINE

### Intent Statement

Skyline lighting encompasses two components: the lighting of the building crowns and the lighting of mid-tower sections of high-rise buildings. Building crowns are the architectural expressions that complete the top of a building. The mid-tower of a high-rise building is the portion of the building between the base and the crown.

One of the Lighting Plan’s goal is to emphasize the skyline by articulating building “crowns” or mid-towers with lighting treatments that reflect architectural character and neighborhood identity.

The Lighting Plan’s primary focus is on building crowns along the waterfront and in neighborhoods and streets that have greater commercial activity. Buildings in residential areas should utilize subdued lighting techniques, especially along the building’s mid-section.

The Lighting of key buildings in downtown San Diego collectively creates a united skyline along the bay.

*“Good lighting designs give buildings further character, evoke inspiration and imagination, and draw appreciation....The lighting plan for the city center is a vision for Singapore to be a beautiful tropical metropolis, attracting Singaporeans and visitors to enjoy the most magical moments in our...city --at night.”*

*“Casting the City in a New Light” - The Singapore Lighting Master Plan*

### 3.1-1 Light the Skyline Guidelines

The recommended intensity of lighting and its articulation at the building crown and mid-section is based on the building’s proximity to the waterfront, residential developments and street typology:

**3.1-1.A The Waterfront:** Buildings located between the bay and Harbor Drive form the image of the skyline and should be lighted from the streetwall to the crown. Lighting treatments should emphasize the composition of the building and can include variations in color.

**3.1-1.B Broadway and Horton Plaza:** The use of color and media art is encouraged to enhance the streetscape experience in this highly commercial area.

**3.1-1.C East Village PETCO Park:** Lighting the crowns is encouraged around the ballpark and mid-section lighting techniques should minimize negative impacts such as glare and light trespass that may disrupt those occupying adjacent residential units.

**3.1-1.D Residential Areas:** Buildings in residential areas serve as a backdrop to the skyline and should have lighted crowns at lower lighting levels and minimal mid-section lighting.

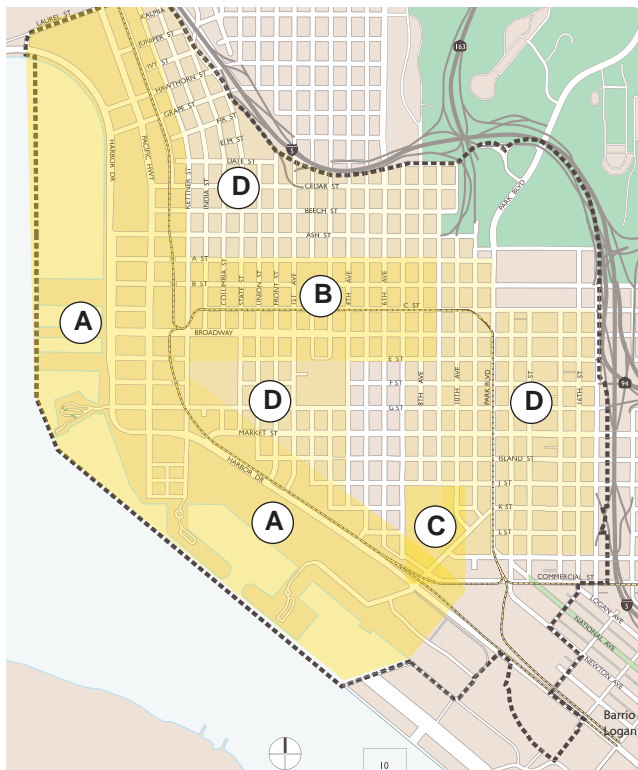


Figure 3.3: Conceptual Map of Energy Use by Neighborhood

### Navigation

- For lighting guidelines for building crowns, see Section 3.2-3 Crown Lighting.
- For lighting guidelines specific to downtown neighborhoods, see Chapter 4.

THE DOWNTOWN SKYLINE

CONCEPT BOX

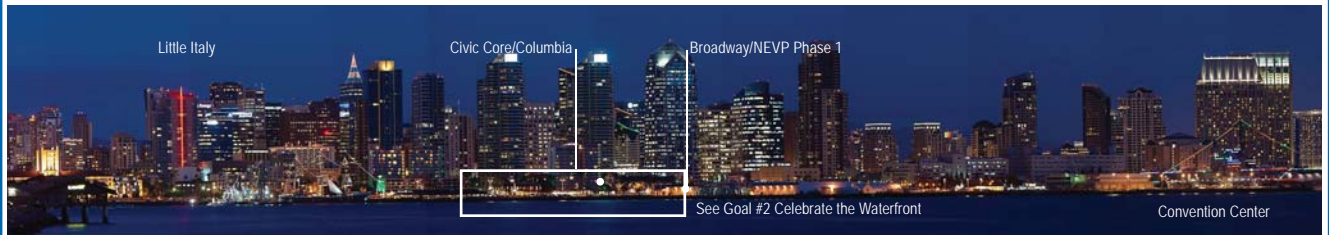


Photo 3.8: The Existing Skyline. Lighting our waterfront will accentuate San Diego’s grand public space and extend its safe and friendly environment along the length of downtown.

SKYLINE CONCEPTS



Figure 3.4: The Skyline during the weekday.



Figure 3.5: The Skyline during the weekend. Greater intensification of light along the waterfront indicates more activity, with buildings that are lighted from building crown to streetwall.



Figure 3.6: The Skyline during a special celebration. Projected light art, sequencing of color lighting, seasonal lighting and intensified lighting treatments.



## 3.1 DOWNTOWN LIGHTING GOALS

### GOAL#2 CELEBRATE THE WATERFRONT

#### Intent Statement

Waterfront lighting has two components:

- The lighting of public space along the shoreline.
- The lighting of the streetwall immediately adjacent to the shoreline.

These two components complement each other in the creation of a “light plinth” - or nighttime visual base - for the city when viewed from the water and from the parks along the water’s edge.

The public space along the shoreline consists of the South Embarcadero and North Embarcadero. Together they form downtown’s “Grand Veranda,” presenting a collection of public streets, pathways, parks, and public art to be celebrated with light.

The shoreline streetwall consists of low- to mid-rise buildings, tower bases and civic and historic buildings. Lighting strategies should highlight the entire architectural composition.

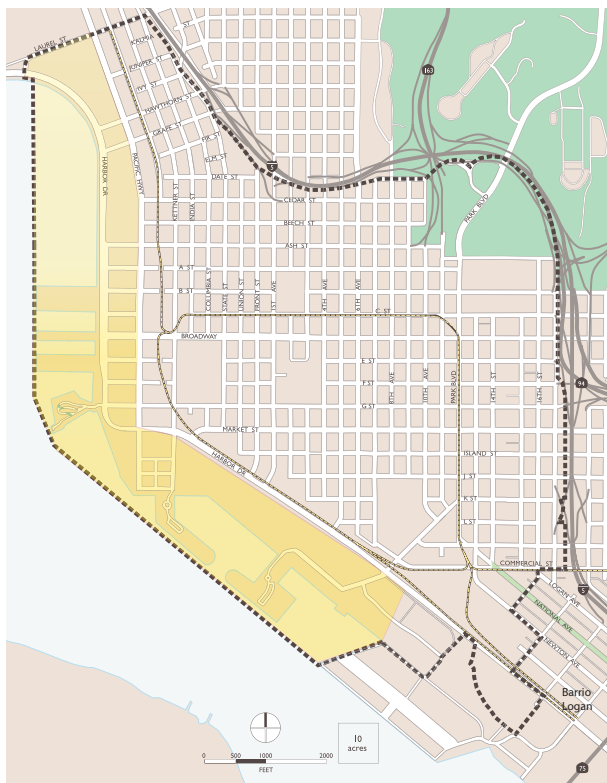


Figure 3.7: The Waterfront



Figure 3.8: North Embarcadero Visionary Plan, Phase 3. A view from the waterfront.

#### 3.1-2 Waterfront Guidelines

**3.1-2.A** Articulate downtown’s “Grand Veranda,” as well as San Diego’s “Front Door,” at Broadway and Harbor Drive with signature lighting designs that are visible features at the pedestrian scale, in accordance with the lighting and public art programs of the NEVP.

**3.1-2.B** The character of light along the waterfront should vary in rhythm and effect, but should be predominantly similar in intensity, color temperature and color rendering quality.

**3.1-2.C** Lighting plans for developments along the waterfront should be coordinated with the objectives of the NEVP.

**3.1-2.D** The County Administration Center and the Old Police Headquarters buildings are key examples of historic landmarks along the Waterfront that should be featured with unique and memorable lighting design solutions.

#### Navigation

- See Section 3.2.4 for Streetwall Lighting Guidelines, relevant to the waterfront.
- See Section 3.3 for Lighting Techniques.

THE WATERFRONT

CONCEPT BOX

Best Practice: The Singapore Waterfront

- (1) Streetwall lighting - Articulating the fine grain of the waterfront building includes highlighting architectural elements: primary entries, columns and bays, and architectural details, such as cornices.
- (2) Lighted Pathways - Lighted walking paths with pedestrian-scaled light fixtures and lighted bollards along the water's edge.
- (3) Lighted Landscape Elements: Uplighting of trees adds to the pedestrian-friendly scale and view from a distance.



Photo 3.9: Singapore Riverfront

WATERFRONT CONCEPTS



Photo 3.10: The lighting of ships makes a skyline memorable. The Star of India. San Diego



Photo 3.11: "Light plinth" between the walkway and the water defines the water's edge. The Singapore Riverfront.

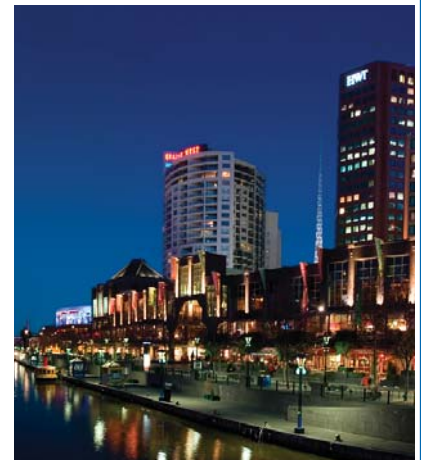


Photo 3.12: A lighted pedestrian pathway and plaza are adjacent to the waterfront. Building streetwalls relate to the scale of the waterfront plaza. The Melbourne Waterfront.



Figure 3.9: The Waterfront



# 3.1 DOWNTOWN LIGHTING GOALS

## GOAL#3 CELEBRATE GATEWAYS

### Intent Statement

Lighting should highlight downtown gateways that mark entry points and define transitions from surrounding neighborhoods.

According to the DCP, “gateways form exciting and noteworthy experiences on arriving in downtown. Some offer views or access to major districts or buildings of civic importance. Others are simply points at which high volumes of traffic enter the area. Public art, signage, enhanced landscaping, and iconic architecture are key to developing gateway design.”



Photo 3.13: Gateways can be experienced exclusively by pedestrians, such as entering the Gaslamp Quarter at 5th Avenue and Harbor Drive from the Convention Center.

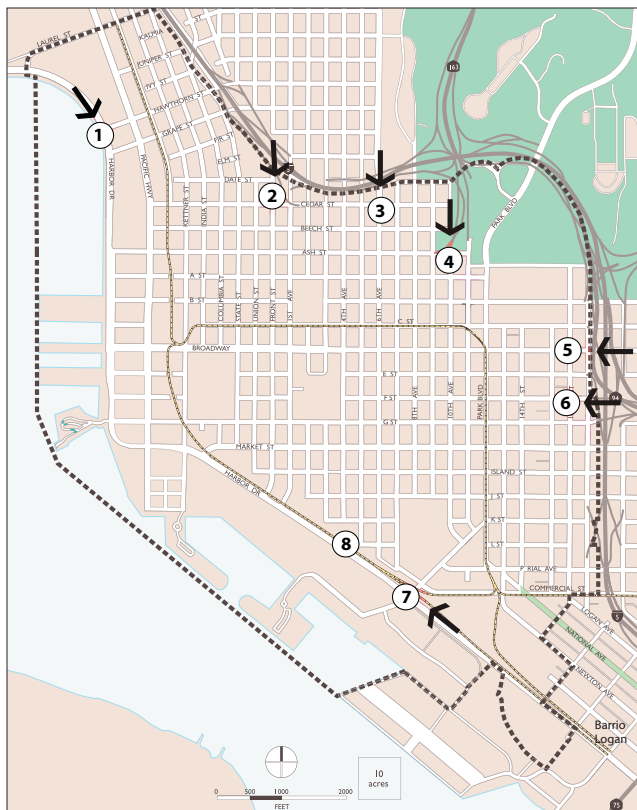
### 3.1-3 Gateway Guidelines

3.1-3.A All gateways, as identified by the DCP, should be lighted for recognition at night.

3.1-3.B Encourage lighted art at identified gateway locations into downtown.

3.1-3.C Enhance downtown’s unique identity by emphasizing entryways into downtown including pedestrian, automotive, rail, air and marine. (DCP 5.6-G-2)

3.1-3.D The design review process for development on gateway sites should include submission of lighting plans for the site, building, artwork and other key elements that reinforce the gateway status of the site.



#### Downtown Gateways Diagram Key

- (1) Harbor Boulevard Airport Gateway
- (2) I-5 Gateway
- (3) Balboa Park Gateway
- (4) 10th Avenue/CA-HWY 163 Gateway
- (5) Golden Hill Gateway
- (6) I-94 Gateway
- (7) Harbor Boulevard South Gateway
- (8) Gateway into Gaslamp from the Convention Center

Figure 3.10: Downtown Gateways Diagram (DCP Figure 7-1)

THE GATEWAYS

CONCEPT BOX



Photo 3.14: Harbor Drive Pedestrian Bridge: serving as the southern gateway into downtown. Lighted iconic bridge structure.



Figure 3.11: Airport Gateway. Harbor Drive is a primary gateway into downtown from the San Diego International Airport

DOWNTOWN LIGHTING GOALS

GATEWAY CONCEPTS



Photo 3.15: Cruise Ship Terminal at Broadway and Harbor Drive (maritime arrival). Colored light art element as a wayfinding feature for visitors.



Photo 3.16: Arrival to Los Angeles International Airport. Incorporation of an art lighting element that is recognizable from the air and ground.



Photo 3.17: El Cortez lighted landmark sign is very much part of the downtown San Diego skyline.

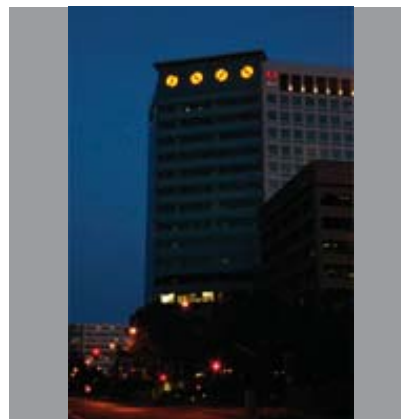


Photo 3.18: Lighted art located at the top of the Adobe's Tower in San Jose, CA. LED semaphore wheels spin every time a plane flies over the building towards San Jose International Airport.



Photo 3.19: Programmable LED light treatments along the Coronado Bridge. Peter Fink (Form) proposal for the Coronado Bridge. Dynamic lighting offers flexibility to define arrival threshold to identify surrounding areas from a distance.

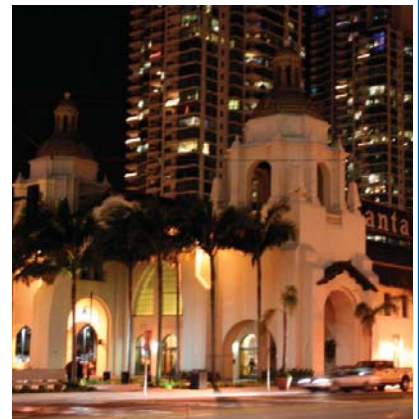


Photo 3.20: Rail arrival via Santa Fe Depot. Historic lighting of the station's forecourt and fountain define the boarding zone for travelers.

URBAN DESIGN FRAMEWORK

# 3.1 DOWNTOWN LIGHTING GOALS

## GOAL#4 CELEBRATE SIGNIFICANT STREETS

### Intent Statement

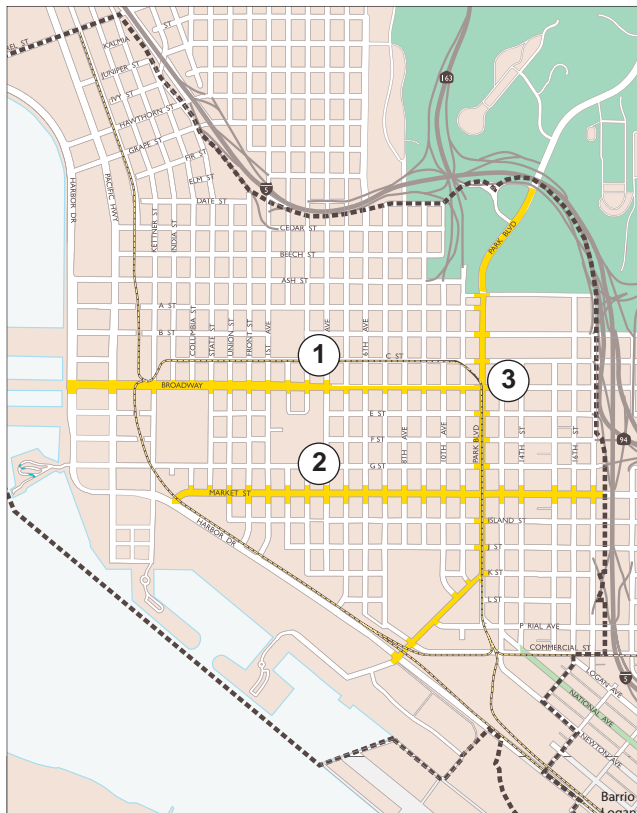
Greater lighting treatments should occur on streets that are designated by the DCP as Main or Commercial streets and have widths greater than the typical downtown 80-foot right-of-way. Such streets serve as a primary route, connecting one end of downtown to the bay, adjacent neighborhoods and Balboa Park.



Figure 3-13: The foot of Broadway with signature median and sidewalk light fixtures and poles.

### Goals

- Property owners are encouraged to light their buildings, especially at the streetwall.
- Allow for the use of light for art, entertainment, commerce and civic information, especially at Horton Plaza’s Broadway frontage.



(1) **Broadway** - Serves as downtown’s primary east-west connection and historic ceremonial street, with street sections varying from 125- to 80-foot right-of-way widths.

(2) **Market Street** - 100-foot right-of-way street width connecting Golden Hill with the bay. Serves as a primary frontage to mostly residential developments.

(3) **Park Boulevard** 80 to 100-foot right-of-way connecting Balboa Park with the bay.

Figure 3.12: Significant Downtown Streets Diagram

### 3.1-4 Broadway Guidelines

- 3.1-4.A Implement lighting approaches that emphasize the verticality of streetscape elements.
- 3.1-4.B Implement lighting designs with layered effects and flexible, controllable systems that allow variations of lighting schemes as part of Broadway’s celebratory lighting enhancements.
- 3.1-4.C The use of multiple colors is encouraged as an identifiable signature of the dynamic Broadway experience.
- 3.1-4.D Develop programs to involve artists and the installation of art in the expression of lighting along Broadway.
- 3.1-4.E The foot of Broadway should be one of San Diego’s key lighting focal points for celebrations and events.

### Navigation

See Chapter 6 Mid-Block Streetlighting Options.



BROADWAY

CONCEPT BOX



Photo 3.21

Broadway Public Improvement Concepts

Allow for color changing lighted trees and streetscape elements that emphasize the verticality of the street section in the public right-of-way. Concepts include:

- Continue the NEVP custom pole light for the ceremonial portion of West Broadway to Fourth Avenue.
- Create iconic nighttime focal points at each end of Broadway, and at the intersection of Broadway and Fifth Avenue.
- Create a public art competition to establish a light art expression for Broadway that could be permanent, temporary or on a rotating basis.

BROADWAY CONCEPTS



Figure 3.14: The NEVP lighting proposal at the 125-foot of Broadway.

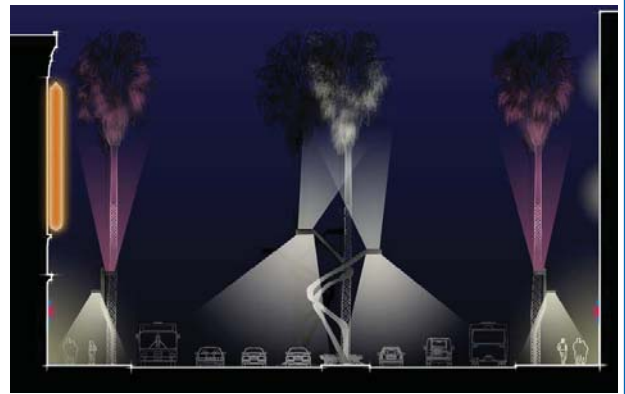


Figure 3.15: Programmable LED color lighting treatments integrated into the sidewalk mid-block lights for special events.



Figure 3.16: The sidewalk mid-block streetlights and street trees are continued to Park Boulevard with programmable LED color lighting treatments.

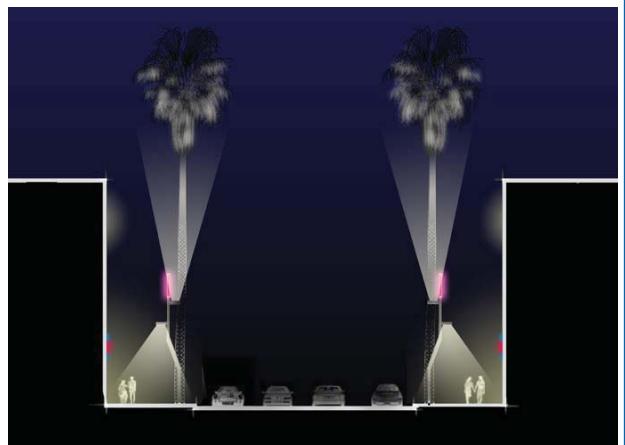


Figure 3.17: Additional lighting attachments to the street mid-block light poles. Possible public art integration.

**Broadway**

Broadway connects the central and eastern portions of downtown to the waterfront. The lighting of Broadway unifies the downtown streetscape as the ceremonial connection of San Diego to the bay.

As Broadway connects the inner core of the city to the waterfront, it also connects neighborhoods and activities (north to south) along its length. The street section of Broadway responds to its proximity to the bay; widest at the western end of Broadway (from Harbor Drive to Third Avenue) at 125 feet with stepped reductions of the right-of-way down to 80 feet east of Fourth Avenue.

The character of buildings and the streetwall also correspond to the street section, with more commercial buildings towards the bay, and Federal and state government buildings between State Street and First Avenue. A cluster of historic buildings are located between Third and Seventh avenues. East of Seventh Avenue, the scale of the streetwall varies with many parcels that are development opportunities.

Recent studies have reinforced the historical significance of Broadway, identifying downtown’s most important retail corner as Broadway and Fifth Avenue. However, this intersection remains under-developed today.

Planned public improvements include the NEVP along the waterfront, as well future private developments west of Kettner Boulevard. These improvements will add vibrancy and define the terminus of Broadway as part of the image of the skyline and focal point for celebrations and events.

The Lighting Plan promotes a strategy with public and private lighting guidelines for the enhancement of Broadway as one of downtown’s ceremonial and principal boulevards.

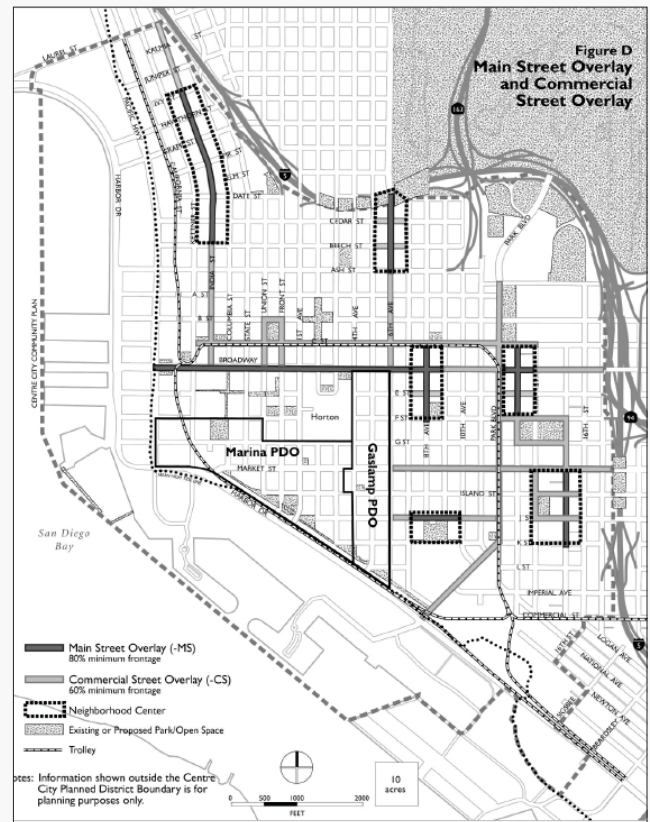
Lighting should elevate the commercial aspects of the street, enhance the nighttime orientation between the waterfront and civic core, and highlight the historical

assets along Broadway.

Broadway should be treated as downtown’s main boulevard with lighting strategies for the near- and long-term future, with standards that will elevate Broadway’s status in San Diego to a similar level of quality and sophistication as other premier downtown boulevards, such as the Champs Elysees in Paris, Broadway in New York City, and Michigan Avenue in Chicago.

**Main and Commercial Streets**

Main and Commercial Streets, as designated by the DCP, should have overall greater lighting intensity at the ground level and streetwall to support the commercial ground-level frontage and sidewalk activity. Refer to Figure D - Main Street Overlay and Commercial Street Overlay of the PDO for locations of all Main and Commercial Streets within the Centre City Planned District.



**Figure 3.18: Figure D - Main Street Overlay and Commercial Street Overlay of the PDO**

## MARKET STREET CONCEPTS

The intent of the lighting along Market Street is to reinforce the 100-foot right-of-way, residential neighborhood and commercial uses that are located along the street edge by emphasizing the median element of the boulevard as a lighting connector and east-west link to the waterfront, and secondarily as a residential link to the Bay. The concepts were developed to characterize Market Street with its own identity, creatively using static white light emanating from playful forms to strike a balance between a busy urban passageway and an everyday route for locals.

## CONCEPT BOX

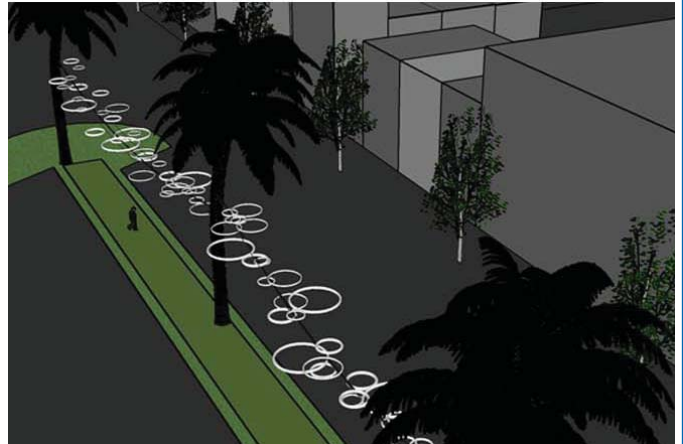


Figure 3.19: Suspended Circulares

## MARKET STREET MEDIANS

## Median Lighting Concepts for Market Street

Fig 3.19 Suspended Circulares – An animated layout of various sized circular luminaires mount to cables taunt between trees. This scheme provides distinct identity throughout Market Street along with an ambient overhead glow to supplement nighttime activities as well as introducing a daytime sculptural component.

Fig.3.20 Vertical Festoons – Dangling luminaires play on the verticality of the trees while creating a prominent sparkle above spans of medians, distinguishing Market Street from its surrounding neighborhoods. Twinkle lights wrapped throughout the tree-lined walkways enliven the streetwall and contribute to both safety and wayfinding at the pedestrian level.

Fig. 3.21 Glowing Lanterns – A catenary system between trees supports strung lanterns overhead along the median. A glowing element creates visual interest from a distance while a downlight component directs light for pedestrians below. Abstract tree sculptures allow for an unexpected lattice of light, enhancing the pedestrian experience along the streetwall.



Figure 3.20: Vertical Festoons



Figure 3.21: Glowing Lanterns



## 3.1 DOWNTOWN LIGHTING GOALS

### GOAL#5 CELEBRATE OPEN SPACES

#### Intent Statement

A lighting program will expand the useable time of parks and open spaces after dark as outdoor venues capable of responding to a variety of community needs. All parks should have nighttime lighting that provides a sense of security to park users from dusk to dawn. Visual contrast should be addressed to minimize the perception of dark areas. The type and style of the luminaires and poles should relate to the neighborhood and use of the park. For the purposes of defining lighting standards, new and existing parks have been identified as residential, civic/commercial, linear and pocket parks.



Figure 3.23: Future East Village Green Park. (DCP rendering)

#### 3.1-5 Open Space Lighting Guidelines

3.1-5.A Residential parks should have a low level ambient lighting system consisting of pedestrian scale poles, (ie: +/-12' high) and/or low level bollards, (ie: 36-42" high), or a combination of the two could be used to create a comfortable walking environment adjacent to residential areas.

3.1-5.B Civic and Commercial parks should have a lighting system that encourages use at night. Security lighting for after hours will exist, along with additional layers of light, to accommodate special events and uses as determined by the neighborhood. These lighting systems should utilize higher poles and more complex controls to accommodate a range of uses. Dynamic lighting with modulation of color and projection onto surfaces is also appropriate.

3.1-5.C Linear and Pocket Parks would fall into one of the above categories, residential or commercial, depending on the adjacent use. Specialty lighting needs, such as for a small amphitheater, should be accommodated with necessary lighting equipment and local controls so the systems are used only as needed.

3.1-5.D Define lighting approaches based on the form and function of the park and open space.

3.1-5.E Parks should include a lighting program that addresses public safety and establishes the nighttime branding of the park.

3.1-5.F Permanent and/or temporary lighting systems that have the flexibility to support a variety of passive and active open space uses are encouraged.

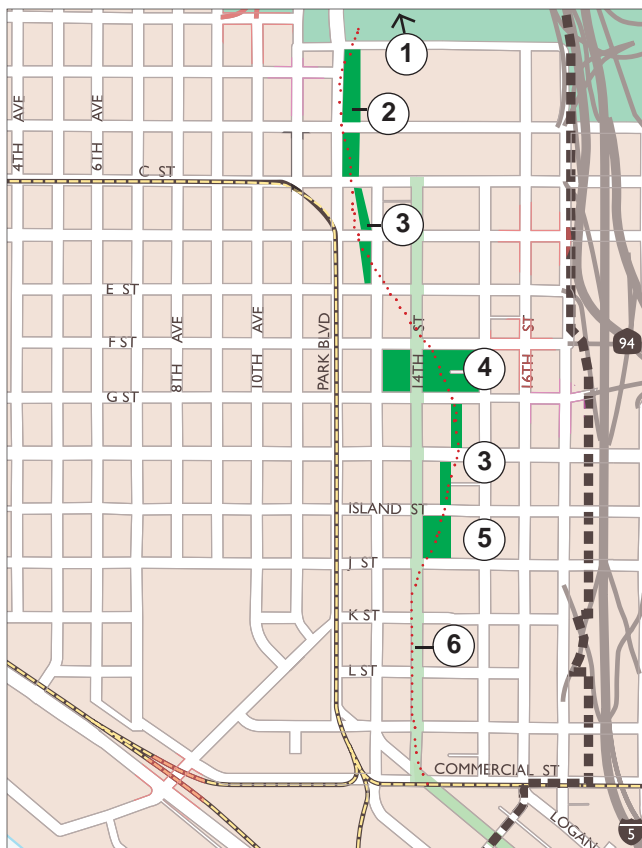


Figure 3.22: Lighting Opportunities: parks, open space and "green street" connectivity. (1) Balboa Park - further up, (2) City College park frontage, (3) pocket parks, (4) proposed East Village Green Park, (5) Island Avenue Park, and (6) green street (14th Street).

OPEN SPACE OPPORTUNITIES

CONCEPT BOX



Director's Park, Portland

The translucent appearance of the shade canopy during the day is achieved by the height of the structure and spacing of the glu-lam beams.

The canopy is illuminated at night with LED fixtures attached along the underside of the beams, providing for ambient lighting throughout the park and reflectivity off the water.

Photo 3.22: Director's Park at day



Photo 3.23: Director's Park at night

DOWNTOWN LIGHTING GOALS

BEST PRACTICE EXAMPLES



Photo 3.24: Lighted Pathways. Consistently spaced pedestrian scale luminaires.



Photo 3.25: Converted Parking Lots. LED uplighting of the park perimeter. Counterpoint Park, Seattle.



Photo 3.26.: Public Gathering Areas. Large open area for video projections. Bryant Park, New York City.



Photo 3.27: Linear Parks. The pathway is lighted by multiple complementary types of light fixtures.



Photo 3.28: Lighted Art. Activates public spaces.



Photo 3.29: Public Art in Civic Places. Lighted art objects define the public space.

URBAN DESIGN FRAMEWORK

## 3.1 DOWNTOWN LIGHTING GOALS

### GOAL#6 CELEBRATE PUBLIC ART AND SPECIAL EVENTS

#### Intent Statement

Establish annual temporary light events, featuring projected light and other artistic lighting expressions throughout downtown that articulate the character of significant objects, buildings, neighborhoods and special events.

#### Goals

- Establish a selection and review process that facilitates the creation of temporary light events.
- Facilitate the planning and implementation of an annual event where photography, short films, animation and light-based art is displayed on select spaces and buildings in downtown.
- Facilitate special lighting events with specific events such as Comic-Con, the San Diego Film Festival and other special civic happenings.
- Establish a Downtown Light Arts Committee or non-profit entity that could facilitate the coordination and promotion of temporary light events.
- Facilitate the creation of public art works which have a nighttime presence.
- Make “lighted” public art a significant part of the nighttime identity and branding of San Diego.

#### 3.1-6 Public Art and Special Event Guidelines

3.1-6.A Lighting guidelines for events are similar to those for buildings in that light intensity, light trespass and glare must be minimized through thoughtful selection of lighting solutions where there are adjacent residential units.

3.1-6.B Lighting events in residential neighborhoods should define hours of operation as part of the approval process.

*Lighting events and art serve as a method of expression that utilizes all of its surrounding materials to produce an interactive effect on its environment. This new wave of artistic expression has pushed the boundaries of the conventional art medium, and has challenged the audience’s conception of digital art by projecting it upon familiar and well used structures.*

#### Guidelines (Continued)

3.1-6.C Lighting events should take advantage of unique architectural opportunities, such as blank walls and open space.

3.1-6.D Support the functions of a neighborhood with recurring light art events.

3.1-6.E Increase public exposure to light art along circulation paths.

3.1-6.F Allow for a special Dark Sky override in case event of extraordinary “once in a lifetime” astronomical events.

3.1-6.H Layered and adaptable lighting of buildings that can adjust to reflect special events, festivals and celebrations should be considered.

3.1-6.I All lighting concepts for temporary events, including the use of projected light, such as lasers and Sky-Trackers, should be within the regulatory requirements of safe air navigation.



PUBLIC ART AND SPECIAL EVENTS

CONCEPT BOX

Blank Walls as Creative Lighting Canvases

Large areas of blank or minimally articulated walls offer opportunities for creative lighted expressions and temporary event themed lighting that add activity and interest to the night-time urban fabric.



Photo 3.30: Non-descript or blank walls exist in various locations throughout the city.



Photo 3.31: Projected light can be a recurring event in community spaces

DOWNTOWN LIGHTING GOALS

BEST PRACTICE



Photo 3.32: Public art suspended over important intersections can act as orientation landmarks and gateways.



Photo 3.33: Sculptures with light art identifies a space within a park.



Photo 3.34: Projected light art onto buildings. This lighted event in Frankfurt, Germany draws thousands of visitors each year.



Photo 3.35: Seasonal light veils on buildings. Macy's, New York City.



Photo 3.36: Use of exterior architectural paneling as a medium for light artists.

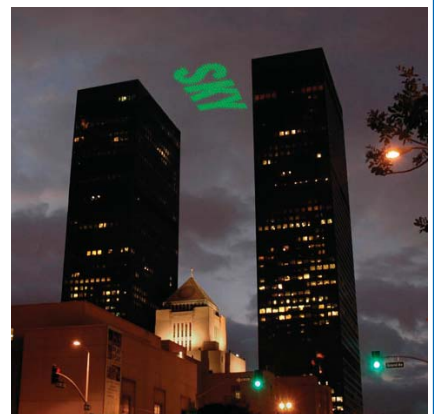


Photo 3.37: Create unique opportunities for the exhibit of art.

URBAN DESIGN FRAMEWORK

CROWN



Photo 3.38: Gentle washes of light with subtle color temperature changes can create light compositions that flatter stately buildings.



Photo 3.39: Uplighting can be an effective way to highlight the vertical profile of the crown.



Photo 3.40: Lighting can emphasize the complex structural system of a roof design.

MID-SECTION



Photo 3.41: Lighting can be integrated into the exterior cladding of a building.



Photo 3.42: Uplighted washes should be aimed at the building with subtle intensity.

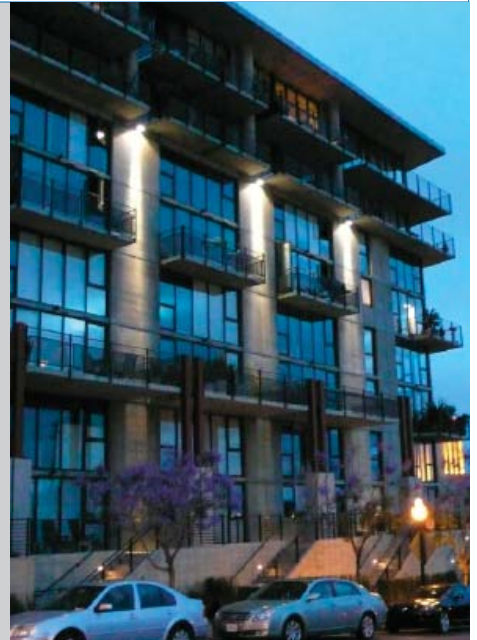


Photo 3.43: The lighting systems can be integrated with the structural system, stressing the design and verticality of a building.

STREETWALL



Photo 3.44: Lighting the streetwall of buildings can accentuate the detailed filigree and add critical fine grain to evening urban landscapes.



Photo 3.45: Lighting systems can be integrated into the architecture, highlighting the design with unexpected patterns.



Photo 3.46: Lighting at the streetwall should support the entries and base while providing for some light spill onto the sidewalk.



## 3.2 LIGHTING DESIGN GUIDELINES

### Intent Statement

The lighting guidelines in this section are intended to be a reference for new and existing buildings throughout downtown San Diego, providing inspiration and advice for those looking to implement exterior lighting improvements.

### Overview

Lighting guidelines are organized in two ways. First, overall guidelines have been established based on the PDO's definition of streetwall, mid-section and crown. Refer to Figure 3.24: PDO Model for an illustration clarifying typical building. Secondly, these guidelines for typical massing have been adjusted further based on the neighborhood that the building will be located within based on the neighborhood location (see Chapter 4 Downtown Neighborhoods). Best practice photo examples are provided to complement the guidelines and should be referred to when evaluating lighting strategies.

The guidelines prioritize greater intensity of lighting in places of high activity: public spaces, the waterfront, Main and Commercial streets, the ballpark area and Neighborhood Centers, while minimizing architectural lighting above the streetwall in more residential areas.

Crown

Mid Section

Streetwall

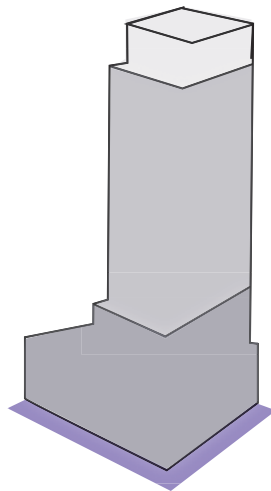


Figure 3.24: PDO Model

### 3.2-1 Lighting Design Guidelines (General)

3.2-1.A Employ lighting design objectives that are specific to downtown districts and areas as defined by the Lighting Plan.

3.2-1.B Lighting strategies should prioritize the streetwall and crown of buildings, and may allow mid-section lighting (of high-rise buildings) depending on the location of the building within the city context, use of building surface materials, and the type of lighting solution proposed.

3.2-1.C The lighting of buildings should highlight the composition, structure and articulate building elements.

3.2-1.D Support sustainable design objectives by efficient use of energy through new lighting technologies.

3.2-1.E Lighting effects that project light downward are generally encouraged to minimize light pollution.

3.2-1.F Buildings with large amounts of transparency that allows for direct lines of sight into the building needs little or no exterior lighting.

3.2-1.G Buildings with highly specular or reflective exterior materials should have minimal exterior lighting treatments because of glare and reflectivity.

3.2-1.H Lighting strategies that have no visual relation to the architectural composition of the building should not be allowed.

3.2-1.I All conduit and electrical sources should be concealed when possible.

3.2-1.J Lighting attachments should be designed to be UL listed for exterior wet location, accommodating maintenance access and window-washing service.

3.2-1.K Acrylic finishes on fixtures should be sunlight resistant with UV stabilization.



### 3.2-2 Historic Buildings - General Lighting Guidelines

#### Intent Statement:

Historic buildings play a special role in enhancing downtown's image and legibility at night. Lighting for historic buildings shall celebrate their architectural detail, heritage and symbolic importance. Buildings designated as "historic" are by code on a case-by-case basis, generally allowed more flexibility in energy usage, based on existing lighting systems. The lighting of downtown's historic buildings is a priority.

3.2-2.A A warm color temperature of light (3000K) for general lighting that provide system flexibility should be utilized for dynamic celebratory and seasonal effects.

3.2-2.B Lighting effects applied to historic buildings within the downtown as part of special events are encouraged.

3.2-2.C Lighting equipment should not damage or detract from the historical fabric of the building.

3.2-2.D Light historic buildings in its entire architectural form so that the buildings are read as three-dimensional.

3.2-2.E Emphasize the historic identity and detailing that makes the building unique from a historic perspective.

3.2-2.F All lighting and commissioned art on historic designated buildings should comport to the standards set by the Secretary of Interior Standards for Historic Buildings.



Photo 3.47: The lighting identity of historic buildings may share the common thread of a warm color temperature solution.



Photo 3.48: The Grant Hotel, San Diego. The flexibility to control colored light variations allows opportunities for expressions for holidays.



Photo 3.49: Historic lighting can include monuments and other constructed objects important to our heritage.



Photo 3.50: Featuring the exquisite detailing commonly found in historic structures adds to the evening environment.



Photo 3.51: Unique approaches to building crowns can enhance the overall skyline experience with varying compositions.



Photo 3.52: Crown lighting should enhance the architectural composition by emphasizing its structure and identifying shape.



Photo 3.53: Crown lighting can also have programmable lighting variations for seasonal events or holidays. Empire State Building, New York City.

### 3.2-3 Crown (Upper Tower) Lighting Guidelines

#### Intent Statement

The Crown refers to the upper tower, defined by the PDO, as the upper 20 percent of the tower, measured above the base or mid-zone to the top of the building (including mechanical penthouses).

3.2-3.A Creative lighting techniques that enhance and express the architectural composition and structure of the building crown are encouraged. Lighting effects that highlight the architectural form, such as internal illumination or backlighting, and with variations in color can enhance the signature elements of individual buildings.

3.2-3.B Flexible lighting systems and controls that can provide unique lighting variations and color modulations, with the capability of dimming or complete shut-off on fixed schedules are encouraged, especially above the streetwall after business hours.



## 3.2-4 Mid-Section Lighting Guidelines

### Intent Statement

The Mid-Section zone, defined by the PDO, refers to the portion of a building located above the base and below the tower crown, with a maximum height of 180 feet.

3.2-4.A Mid-Section lighting should visually connect the building base to the building crown and emphasize the architectural composition, scale, structure and character of the building.

3.2-4.B Mid-Section lighting is encouraged for high-rise buildings that are located between the waterfront and the railroad tracks (Pacific Highway). Such lighting should articulate the building's underlying architectural character and link the building's crown expression with the lighting of its base.

3.2-4.C Different lighting methods are encouraged to be used for different building types (in response to architectural styles and/or uses such as commercial and residential).

3.2-4.D Uplighting or flood lighting is discouraged in areas of buildings that have substantially specular facades (such as glass or other highly polished material) due to reflection and undesirable light scatter into the sky.

3.2-4.E As activity levels wane, mid-tower lighting should be turned off or dimmed substantially to support energy-saving goals.



Photo 3.54: Lighting can add to the unexpected variations in the fine grain of the streetwall. Rings of light are embedded in the exterior skin with controllable illumination levels. Kunsthaus Graz Museum, Austria.



Photo 3.55: Mid-Section Lighting can connect the crown with the streetwall.



Photo 3.56: The lighting of roof decks should point downwards, emphasizing the space and elements. The Andaz Hotel Roof Deck, San Diego.



Photo 3.57: Expression of the building base, as part of the overall building's lighting design, reinforces both the building's architectural continuity and its streetwall definition.



Photo 3.58: A lighted streetwall defines edges of public spaces.



Photo 3.59: A lighted streetwall defines building entries and provides wayfinding.

### 3.2-5 Streetwall / Building Base Lighting Guidelines

#### Intent Statement

Streetwall is the building façade along a property line adjacent to any public street, with a height that is between 50 and 85 feet as specified in PDO Table 0310-A. The streetwall may include arcades, colonnades, recessed entrances, private open space and urban open space.

3.2-5.A Pedestrian-scaled lighting at the streetwall should emphasize the character of the building points of entry and other wayfinding elements.

3.2-5.B The layering and intensity of lighting should reflect the relative level of nighttime activity within the building and the downtown district, with higher levels in activity nodes such as main streets, commercial streets and plazas and lower levels of lighting in predominantly residential neighborhoods.

3.2-5.C Streetwall / building base lighting that highlights the architectural elements is especially encouraged along the waterfront and Broadway.

3.2-5.D Light fixtures and mounting details should not interfere with the facade design and should be integrated with the architecture and/or landscape.

3.2-5.E Lighting at the base of the building that allows for some projection of light onto the sidewalk is acceptable.

3.2-5.F Private open space that is directly accessible from public space should be considered as part of the overall lighting strategy of the building streetwall.



## 3.2-6 Safety Lighting Guidelines

### Intent Statement

The Lighting Plan identifies the Safety Lighting layer along the building's streetwall (up to 85 feet) including the adjoining sidewalk areas throughout downtown. Safety lighting is defined by the minimum amount of light needed to support basic visual activity, pedestrian movement and object identification at eye level in order to provide a sense of security for pedestrians. The Safety Lighting layer establishes the foundation for visibility and activity in the nighttime environment during all evening hours when artificial lighting is needed. Unlike architectural or special lighting, the Safety Lighting layer and its metrics are governed by various codes and regulations.

The following summary of guidelines illustrates safety principles that should be considered when designing the streetwall of buildings:

3.2-6.A Visibility and the perception of safety is enhanced by white light that is well shielded. White light sources typically allow for better visibility than an equivalent amount of yellowish light from sodium lamps.

3.2-6.B Minimize high contrast approaches that create extremes of brightness and darkness. Uniformity along the streetwall should be emphasized as a foundation for safety lighting.

3.2-6.C Safety lighting should emphasize entrances, pedestrian walkways and parking lots.

3.2-6.D Lighting safety strategies should support activities and uses directly adjacent to the streetwall, such as outdoor cafes.

3.2-6.E Path lighting should correspond with ADA access routes.

3.2-6.F Lighting strategies should employ Crime Prevention Through Environmental Design (CPTED) concepts that reduce the opportunities for crime to occur.



Photo 3.60: Layered lighting approach: Light from multiple sources: building lighting, display lighting and ornamental tree lighting.



Photo 3.61: Lighted outdoor seating areas can provide additional light onto the sidewalk contributing to a greater feeling of security.



Photo 3.62: Evenly spaced light sources along a pathway.



Photo 3.63: LED light sources can be integrated into architectural features of a building.



Photo 3.64: LED light sources can be integrated within the window panels with changing color capabilities.

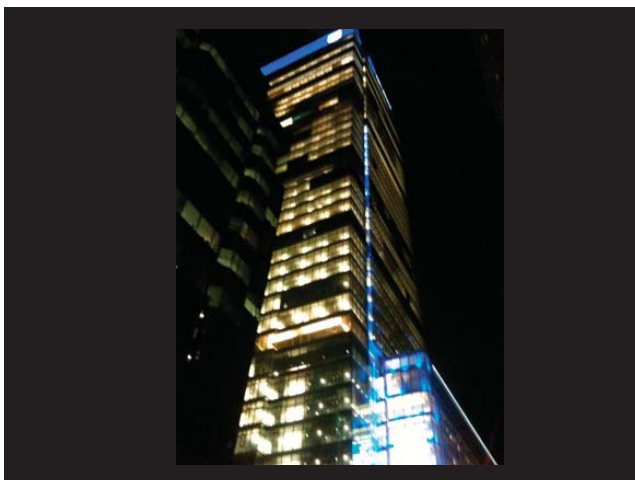


Photo 3.65: Lighting can connect the crown with the streetwall.

### 3.2-7 Architectural Lighting Guidelines

#### Intent Statement

The Architectural Lighting layer enhances the aesthetic appeal of the entire building, expressing its form, profile and structure while emphasizing the unique character of the building, district and/or neighborhood. The Architectural Lighting layer can raise awareness of the design and highlight elements that should stand out against a background.

Architectural lighting guidelines are organized in the vertical dimension per the PDO definitions of street-wall, mid-section and tower crown and by the appropriate amount of illumination to achieve the desired aesthetic, also taking BUG criteria into consideration.

3.2-7.A Lighting should enhance the architectural character, geometry and structure of a building.

3.2-7.B Lighting should promote the verticality, transparency, and porosity of architecture that can feature the complexity of a building's design.

3.2-7.C Lighting treatments should be emphasized on buildings that are located on street intersections, view corridors, significant streets and gateways to assist in downtown wayfinding.

3.2-7.D Architectural lighting should be aimed towards the building or intended lighted feature, minimizing light pollution. The light source should be integrated into the building design whenever possible.

3.2-7.E Architectural lighting should have layers of control or dimming capability to allow for increasing/decreasing intensity or completely shutting lighting off above the streetwall after business hours.

3.2-7.F Architectural lighting at the mid-section may be limited depending on its location within a downtown neighborhood and its direct residential adjacencies.



### 3.2-8 Special Lighting Guidelines

#### Intent Statement

The Special Lighting layer is defined as festival, celebratory, seasonal and/or holiday lighting that occurs on weekends, holidays and special event days. The Special Lighting layer allows for greater intensity and variation of lighting treatments that normally would not occur during the weekdays. Lighting effects for this layer may include projections, changing color sequences and/or imagery that can be employed in different contextual scenarios that may include multiple buildings, entire neighborhoods, or limited concentration on main or commercial streets.

The Lighting Plan provides the foundation for lighted events, acting as a driver for economic development in downtown.

**3.2-8.A** Buildings, streets and public spaces with a commercial emphasis are envisioned as appropriate backdrops for such lighted events in the Lighting Plan. The areas along the waterfront, Broadway, Horton Plaza, the Gaslamp Quarter, India Street in the Little Italy District, as well as the areas around Petco Park, provide a suitable canvas for the Special Lighting layer. [See Figure 3.39 Special Events Map]

**3.2-8.B** The Special Lighting layer has a diverse and varied palette of effects. Project-specific selections should be determined appropriate lighting solutions based upon context and the type of celebration on a case-by-case basis.

**3.2-8.C** More intense effects appropriate on holidays or yearly special events, may include beams of light and coordinated light show projections along the waterfront. Such events will require coordination with the City of San Diego and surrounding airports and observatories.

**3.2-8.D** More moderate effects may include changing light patterns. Animated imagery is suitable for weekend evenings and may require a simple permit.



Photo 3.66: The Symphony of Lights, Hong Kong. All buildings along the waterfront are lighted as part of an annual celebration.



Photo 3.67: MainFest, Frankfurt. All buildings along the riverfront are lighted as part of an annual celebration that includes fireworks, projected light art and color modulations on tower crowns.



Photo 3.68: Holiday Lighting Example. Mister A's. San Diego. Seasonal display draws the public for special events.



LIGHTING OPPORTUNITIES



Photo 3.69: Lighted Street Projections.



Photo 3.70: Seasonal events and lighting overlays. Denver, Colorado.



Photo 3.71: Seasonal Outdoor Lighting fixtures.

CONCEPT BOX

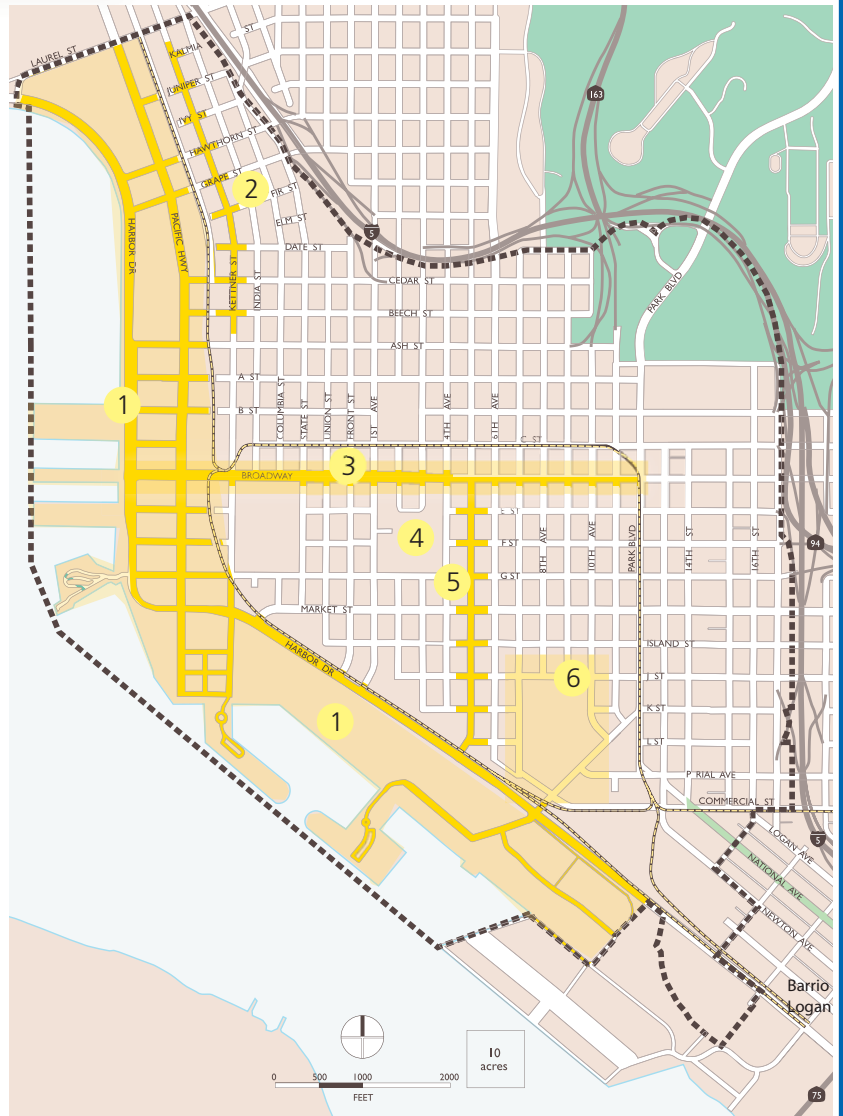


Figure 3.25: Special Lighting Map

AREAS OF OPPORTUNITIES

1. The Waterfront: Greater intensity of lighting involving multiple buildings along the waterfront, slower color modulation.
2. Little Italy India Street: “Fine Grain” lighting elements, such as festoon lighting, lighting of trees, lighted public art and lighted projections onto buildings.
3. Broadway: Intensity of lighting, color modulation and lighted public art integration.
4. Horton Plaza: Projected digital media and art, greater light and color modulation.
5. Gaslamp Quarter 5th Avenue: Lighting that emphasizes the historic inventory of buildings and active public realm. Projected light art and light veils over buildings are some ideas.
6. PETCO Park: Lighting that emphasizes the architecture of the ballpark including its perimeter and main entries.

TECHNIQUES:

SEE 3.3-2.2.D UPLIGHT FACADE. ROOF LIGHTING DURING SPECIAL EVENTS



Photo 3.114



Photo 3.117

SEE 3.3-2.2.D UPLIGHT FACADE - LED COLOR MODULATION

SEE 3.3-2.2.A CROWN LIGHTING



Photo 3.115



Photo 3.118

SEE 3.3-2.1.C WHITE DOTS ON FACADE

SEE 3.3-2.2.C UPLIGHT LEDGE, CANOPY OR ROOF OVERHANG



Photo 3.116



Photo 3.119

SEE 3.3-2.1.A BUILDING MOUNTED DOWNLIGHTING

3.2-1.F BUILDINGS WITH LARGE AMOUNTS OF TRANSPARENCY THAT ALLOWS FOR DIRECT LINES OF SIGHT INTO THE BUILDING NEEDS LITTLE OR NO EXTERIOR LIGHTING:



Photo 3.120



Photo 3.121



Photo 3.122



Photo 3.123

## 3.3 LIGHTING TECHNIQUES

### Intent Statement

The lighting techniques described in this section are based on “best practice” applications that emphasize the composition of buildings in ways that minimizes light trespass and glare. The Lighting Techniques section should be used as reference for new and existing buildings throughout downtown San Diego, providing guidance for those looking to implement exterior lighting improvements.

### Overview

The Lighting Techniques are organized into three sections:

**3.3-1: Lighting Examples:** The purpose of this section is to show a quick snapshot of lighting styles that are discouraged versus those that are preferred. Too much light intensity, and overemphasis on the light source as a focal point of the building is a common issue that defines discouraged lighting styles. Light intensity is currently regulated by the building code, CALGreen. The Lighting Plan focuses on promoting preferred lighting styles and techniques that enhance the nighttime appearance of buildings, focusing on function and aesthetics rather than lighting measurements.

Common lighting styles that are strongly discouraged are shown along the top of the section and include: (1) lighting attachments that provide an outline of a building’s massing or significant form, (2) attachments with no relation to the building, (3) lighted shapes that have no relation to the building’s design, (4) reflective and/or specular surfaces that are not suitable for exterior lighting because of unwanted glare, (5) uplighting that creates light trespass, (6) color saturation that washes out architectural features, and (7) too much light concentrated in one area of a building.

To illustrate what is preferred, best practice lighting examples are provided to address various aspects of discouraged lighting styles, demonstrating more effective techniques that emphasize significant architectural elements, such as facades, exterior paneling systems

and crowns. A description of the preferred lighting approach and reference link to the specific lighting method selection, located in the Best Practice Section, are provided.

**3.3-2: Best Practice:** The purpose of this section is to provide examples of various “best practice” lighting strategies that are organized under three primary lighting methods: (1) Applied Luminaires describes lighting strategies that utilize visible wall-mounted luminaires without a direct view of the light source within the fixture, (2) Architectural Lighted Elements describes lighting strategies that highlight significant architectural elements, such as facades, crowns, ledges, canopies, roof overhangs, architectural niches and light boxes where the light source is hidden from view, and (3) Direct View Luminaires describes strategies for lighting significant architectural volumes, such as a translucent tower crowns, thereby creating a luminaire from architectural forms.

For each lighting strategy, goals are provided as reference to maximize lighting performance. In addition, sample light fixtures images that would typically be used for the lighting strategy are provided for reference.

**3.3-3: Minimize Light Pollution Guidelines:** The purpose of this section is to provide various approaches and techniques to focus lighting onto buildings and minimize unnecessary illumination of the night sky caused by artificial light sources.



3.3-1 Lighting Examples

STRONGLY DISCOURAGED:

1. ATTACHMENTS EMPHASIZING THE OUTLINE OF A BUILDING'S SHAPE OR KEY FEATURE



Photo 3.72

2. ATTACHMENTS WITH NO RELATION TO THE BUILDING'S DESIGN



Photo 3.73

3. LIGHTED SHAPES WITH NO RELATION TO THE BUILDING'S DESIGN



Photo 3.74

4. LIGHTING OF REFLECTIVE OR SPECULAR SURFACES



Photo 3.75

ENCOURAGED:



Photo 3.76

SEE 3.3-2.2.B GRAZING ALONG A SURFACE

*Accenting architectural elements or building profiles with fixtures concealed within the architectural vocabulary provides for more visual interest.*



Photo 3.77

SEE 3.3-2.2.C UPLIGHT LEDGE, CANOPY OR ROOF

*Lighting can be captured and reflected downwards with canopies, ledges and roof overhangs for dramatic effect.*



Photo 3.78

SEE 3.3-2.2.G INTERNAL ILLUMINATION

*Lighting can be integrated within exterior wall systems and provide for asymmetric facade illumination.*



Photo 3.79

SEE 3.3-2.2.G LIGHT BOX INTERNAL ILLUMINATION

*Interior light shelves integrated into the ceiling system can provide for asymmetric facade illumination.*



5. UPLIGHTING:  
GLARE

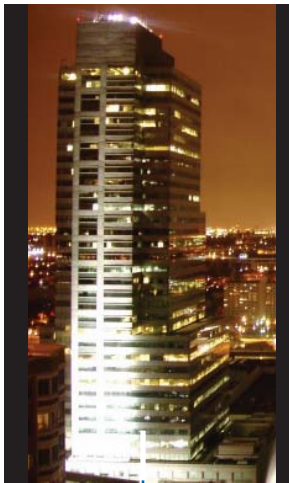


Photo 3.80

6. COLOR  
SATURATION:  
REFLECTIVITY AND  
GLARE



Photo 3.81

7. UNBALANCED  
DISTRIBUTION OF  
BUILDING LIGHTING



Photo 3.82

ENCOURAGED:

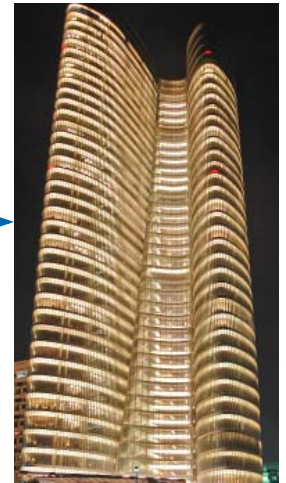


Photo 3.83

**SEE 3.3-2.3.B INTERNAL ILLUMINATION**  
*Lighting integrated into the spandrel panel system*



Photo 3.84

**SEE 3.3-2.2.A CROWN LIGHTING**

*The design of a building and the exterior materials it employs often determines an effective lighting expression.*



Photo 3.85

**SEE 3.3-2.2.F VERTICAL LIGHTED BOX**

*A lighted box atop a building should complement the architecture and exterior finishes.*



Photo 3.86

**SEE 3.3-2.1.A BUILDING MOUNTED DOWNLIGHTING**

*Mounted down and uplighting should emphasize the structure. Surfaces that are reflective or specular should be avoided.*

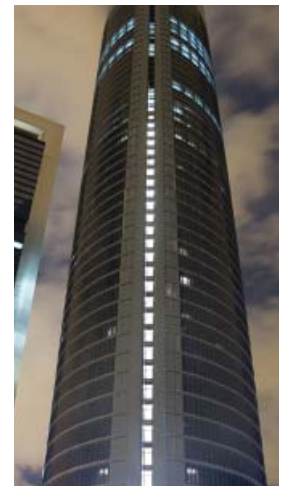


Photo 3.87

**SEE 3.3-2.2.F VERTICAL LIGHT BOX**

*Well-designed buildings can express an effective lighting design by the internal lighting of occupied floors areas and vertical circulation.*

3.3-2 Best Practice

3.3-2.1 APPLIED LUMINAIRES



Photo 3.88



Perspective



Section



Elevation

3.3-2.1.A BUILDING-MOUNTED DOWNLIGHTING

Goals:

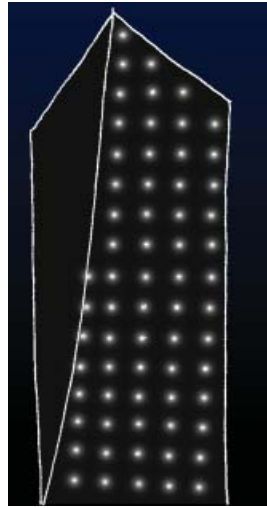
1. Accent vertical elements while providing ambient light below.
2. Use architectural vocabulary to mount fixture discretely.
3. Minimize sky glow and light trespass with full cutoff fixture selection.



Photo 3.80: Sample Fixture Image for Reference



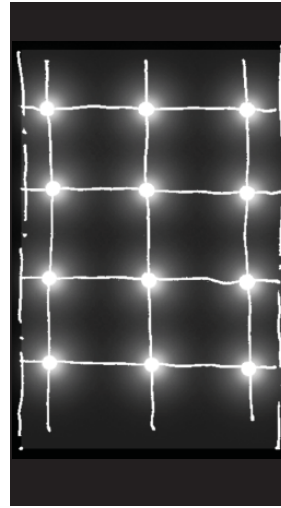
Photo 3.92



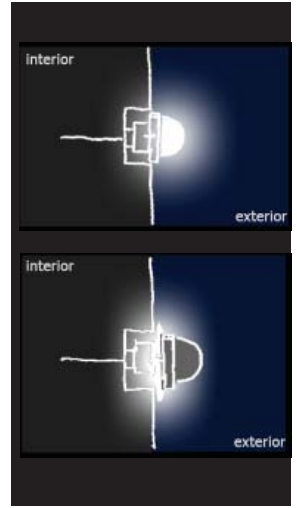
Perspective/Elevation



Section



Enlarged Elevation

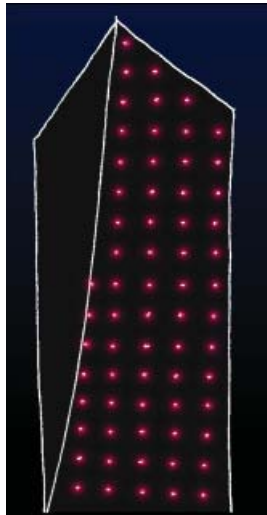


Details

3.3-2.1.B WHITE LIGHT DOTS ON FACADE



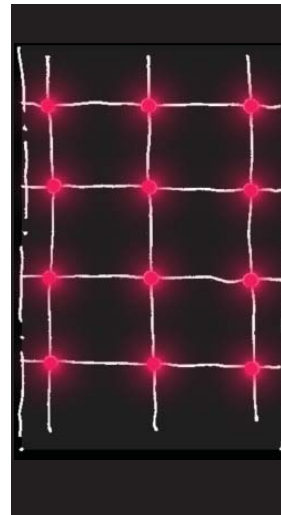
Photo 3.92



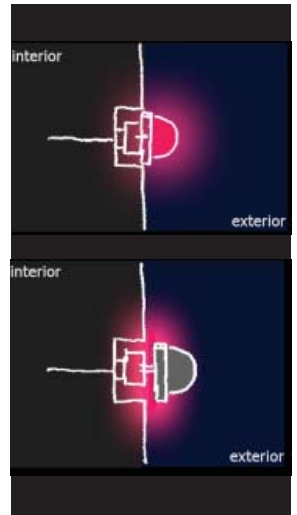
Perspective/Elevation



Section



Enlarged Elevation



Details

3.3-2.1.C DYNAMIC COLOR LIGHT DOTS ON FACADE

Goals:

1. Create visual interest from patterns of static or dynamic light aligned with architectural seams.
2. Use architectural elements such as structure between panels to mount fixture with a clear relationship supporting the form.
3. Provide the opportunity for programmed dynamic light shows for holidays and/or special celebratory occasions.
4. Select appropriate wattage/lumen output in order to minimize excessive spill light or sky glow beyond the building facade.

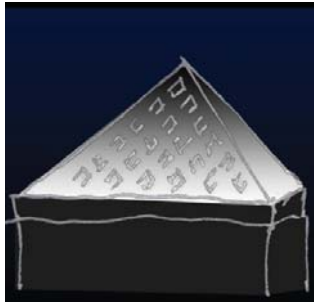


Photo 3.93: Sample Fixture Image for Reference

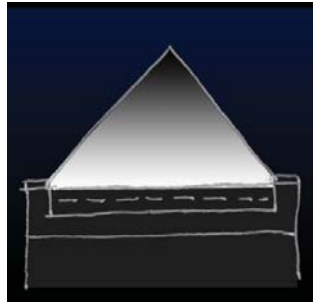
3.3-2.2 ARCHITECTURAL LIGHTED ELEMENTS



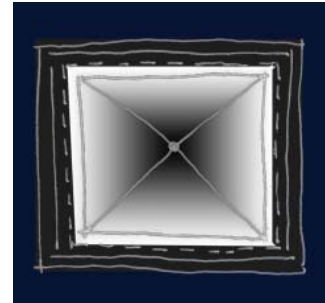
Photo 3.94



Perspective



Section



Plan

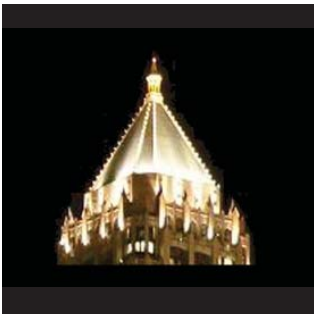


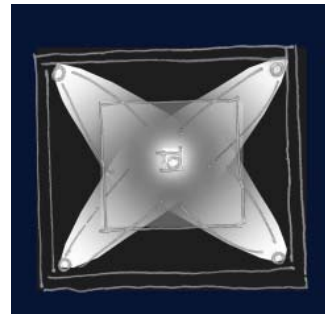
Photo 3.95



Perspective



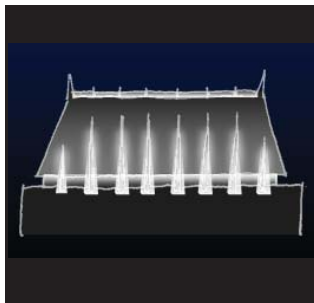
Section



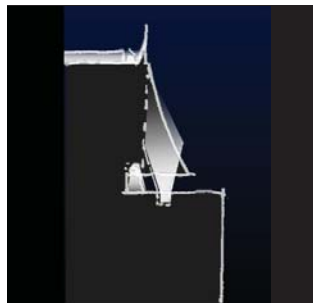
Plan



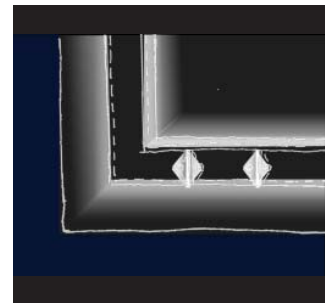
Photo 3.96



Perspective



Section



Plan

3.3-2.2.A CROWN LIGHTING

Goals:

1. Utilize creative opportunities to accent architectural form and highlight character of the building "crown."
2. Use architectural vocabulary, such as niches and ledges, to mount fixture discretely and conceal from public view.
3. Aim fixtures towards building, utilize shielding and lensing, and capture light in architectural niches and details.
4. Select appropriate wattage/lumen output in order to minimize excessive spill light or sky glow beyond crown.

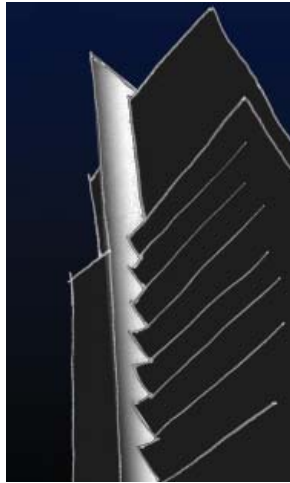


Photo 3.97: Sample Fixture Image for Reference





Photo 3.98



Perspective



Section



Plan

3.3-2.2.B GRAZING ALONG A SURFACE

Goals:

1. Accent vertical elements for visual interest from various vantage points.
2. Use architectural vocabulary such as niches and ledges to mount fixture discretely and conceal from public view.
3. Minimize sky glow and light trespass by aiming fixtures at solid building elements.
4. Use architectural vocabulary, such as niches and ledges, to mount fixture discretely and conceal from public view.
5. Select matte finished surfaces to minimize reflected light.

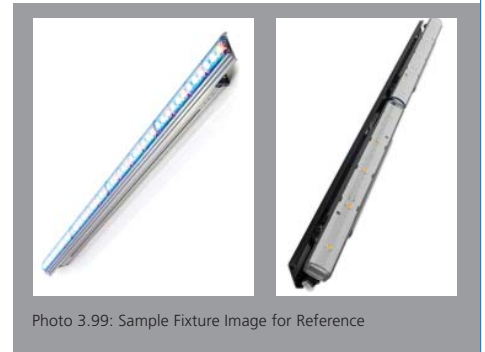
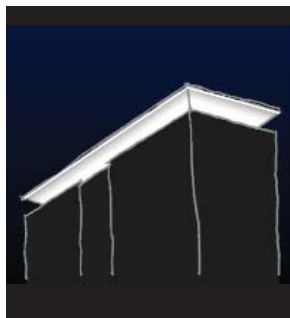


Photo 3.99: Sample Fixture Image for Reference



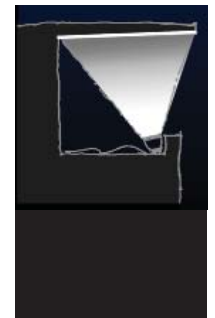
Photo 3.100



Perspective



Section



Detail

3.3-2.2.C UPLIGHT LEDGE, CANOPY OR ROOF OVERHANG

Goals:

1. Highlight horizontal architectural element to accent change in building form.
2. Use architectural vocabulary, such as niches and ledges, to mount fixture discretely and conceal from public view.
3. Minimize light trespass by aiming fixtures towards facade and utilizing shielding.
4. Minimize sky glow by positioning architectural ledges to catch light spill.
5. Select matte finished surfaces to minimize reflected light.

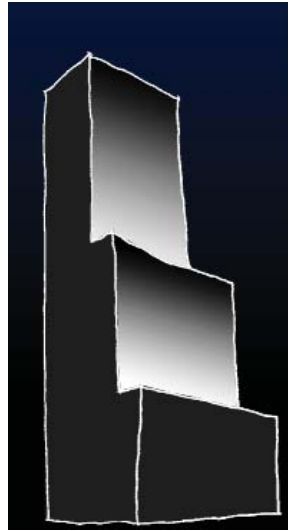


Photo 3.101: Sample Fixture Image for Reference

3.3-2.2 ARCHITECTURAL LIGHTED ELEMENTS



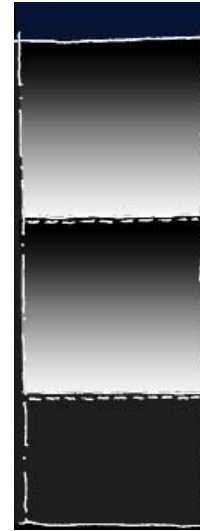
Photo 3.102



Perspective



Section



Elevation

3.3-2.2.D UPLIGHT FACADE

Goals:

1. Highlight the vertical composition of skyscrapers with layered facades.
2. Use architectural vocabulary such as niches and ledges to mount fixture discretely and conceal from public view.
3. Minimize light trespass by aiming fixtures towards facade and utilize shielding.
4. Minimize sky glow by positioning architectural ledges to catch spill light.
5. Select appropriate wattage/lumen output in order to minimize excessive spill or sky glow beyond crown.
6. Select matte finished surfaces to minimize reflected light.

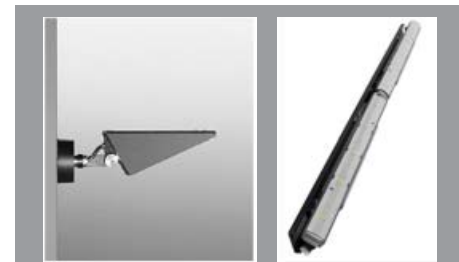


Photo 3.103: Sample Fixture Image for Reference



Photo 3.104



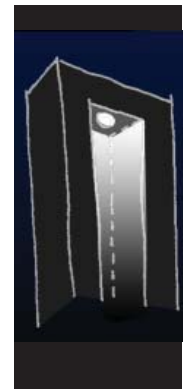
Perspective



Section



Elevation



Detail

3.3-2.2.E DOWNLIGHT IN ARCHITECTURAL NICHE

Goals:

1. Accent vertical elements while providing ambient light below.
2. Use architectural vocabulary such as niches and ledges to mount fixture discretely and conceal from public view
3. Minimize sky glow and light trespass with full cutoff fixture selection.



Photo 3.105: Sample Fixture Image for Reference

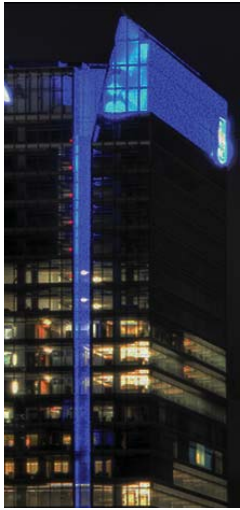
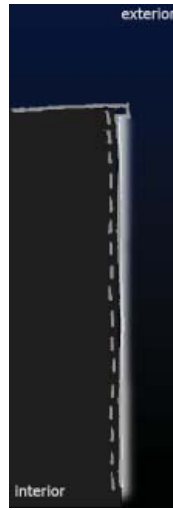


Photo 3.105



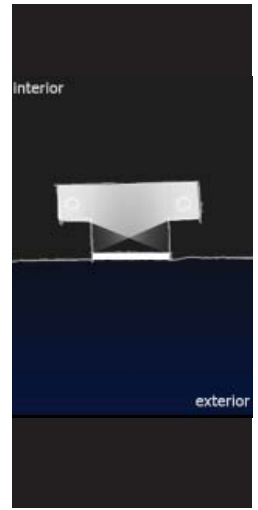
Perspective



Section



Elevation



Detail

### 3.3-2.2.F VERTICAL LIGHT BOX - INTERNAL ILLUMINATION

Goals:

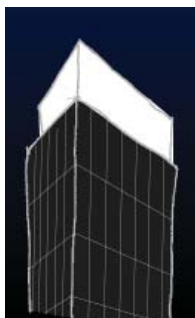
1. Fill an architectural volume with static light for visual interest.
2. Highlight architectural form of horizontal and vertical elements.
3. Minimize sky glow and light trespass by containing the light within the architectural cavity.
4. Use of frosted and/or matte finish materials contributes to control and containment of light.
5. Utilize architectural details to conceal fixture and mounting hardware from view.



Photo 3.106: Sample Fixture Image for Reference



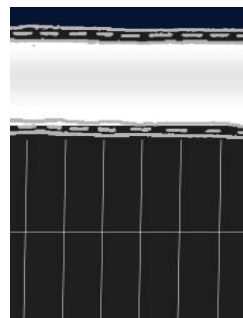
Photo 3.107



Perspective



Section



Elevation



Detail

### 3.3-2.2.G LIGHT BOX - INTERNAL ILLUMINATION

Goals:

1. Fill an architectural volume with static light for visual interest.
2. Highlight architectural form of horizontal and vertical elements.
3. Minimize sky glow and light trespass by containing the light within the architectural cavity.
4. Use of frosted and/or matte finish materials contributes to control and containment of light.
5. Utilize architectural details to conceal fixture and mounting hardware.

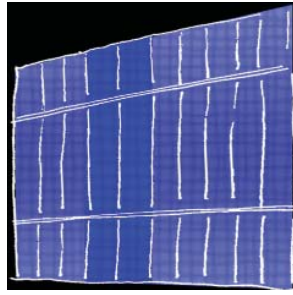


Photo 3.108: Sample Fixture Image for Reference

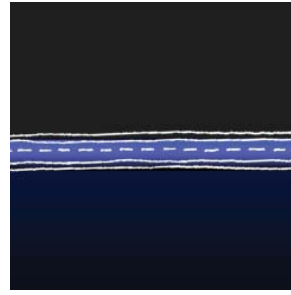
3.3-2.3 DIRECT VIEW LUMINAIRES



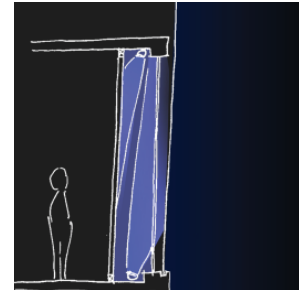
Photo 3.109



Perspective



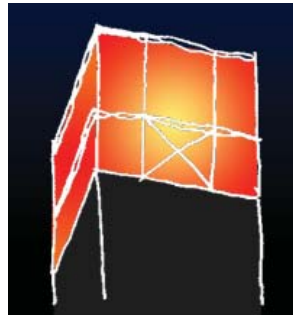
Plan



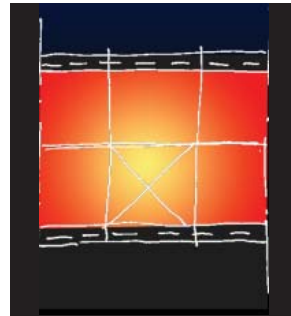
Section



Photo 3.110



Perspective



Elevation



Detail

3.3-2.3.A DYNAMIC LIGHT BOX CROWN

Goals:

1. Fill an architectural volume with dynamic colored light for visual interest.
2. Highlight architectural form of horizontal and vertical elements.
3. Minimize sky glow and light trespass by containing the light within architectural cavity.
4. Use of frosted and/or matte finish materials contributes to control and containment of light.
5. Utilize architectural details to conceal fixture and mounting hardware from view.



Photo 3.111: Sample Fixture Image for Reference





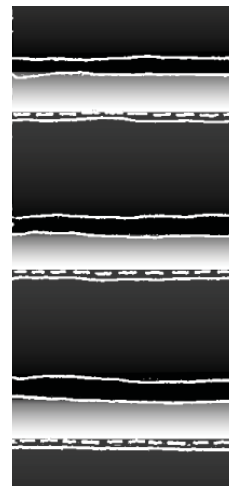
Photo 3.112



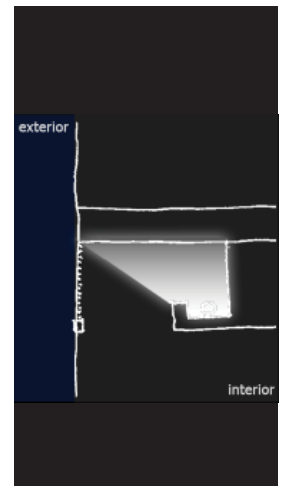
Perspective



Section



Elevation



Detail

### 3.3-2.3.B INTERNAL ILLUMINATION

Goals:

1. Fill an architectural volume and highlight horizontal elements for visual interest.
2. Create an internal or external architectural cove of appropriate dimensions to conceal mounted fixtures and optimize optic performance and control.
3. Minimize sky glow and light trespass by containing light within building
4. Select appropriate wattage in order to minimize avoid excessive spill or sky glow.

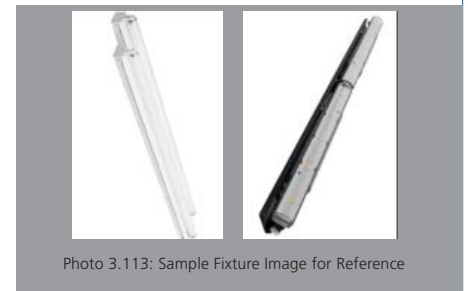
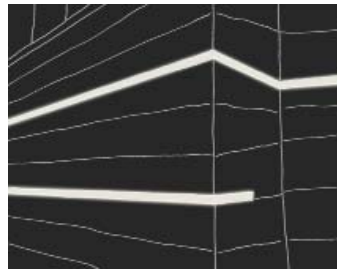


Photo 3.113: Sample Fixture Image for Reference



Photo 3.90



Perspective



Plan



Section

### 3.3-2.3.C DIRECT VIEW LUMINAIRE INTEGRATED WITH BUILDING

Goals:

1. Create visual interest from patterns of light aligned with architectural seams.
2. Integrate luminaires with architectural elements such as structure between panels to mount fixture with a clear relationship supporting the form.
3. Select appropriate wattage/lumen output in order to minimize excessive spill light or sky glow beyond building facade.

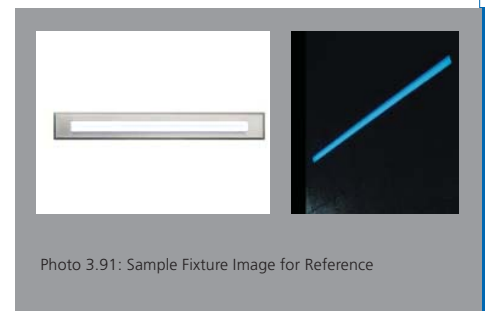


Photo 3.91: Sample Fixture Image for Reference

### 3.3-3 Minimize Light Pollution Guidelines

#### Intent Statement:

The International Dark-Sky Association (IDA) defines light pollution as any adverse effect of artificial light including sky glow, glare, light trespass, light clutter, decreased visibility at night, and energy waste. The U.S. National Park Service defines the term as “principally, the illumination of the night sky caused by artificial light sources, decreasing the visibility of stars and other natural sky phenomena.”

Light pollution is a broad term that refers to multiple unattended results that are caused by inefficient, unappealing, or unnecessary use of artificial light. The Lighting Plan has developed various approaches and techniques to focus lighting onto buildings:

3.3-3.A Lighting design techniques should minimize light pollution, which is defined as any light that goes where it is unintended.

3.3-3.B Lighting design should minimize sky glow that could potentially interfere with nearby Mount Laguna and Palomar observatories.

3.3-3.C Up-lighting should be aimed towards the building.

3.3-3.D Baffles or shields on the luminaires should be included to minimize unnecessary direct light into the sky.

3.3-3.E Light sources with very high color temperatures, ie: above 4000K, should be avoided as the higher color temperature sources contribute additional interference to the observatories.

3.3-3.F Utilize the minimum intensity necessary to achieve lighting design intent.

#### References:

- Illuminating Engineering Society (IES) Recommended Practices, Design Guides, and Lighting Handbook
- ASHRAE 189.1
- CALGreen Section 5.106.8 Light Pollution Reduction
- City of San Diego Outdoor Lighting Ordinance

## BEST PRACTICE

## CONCEPT BOX

Figure Descriptions:

Figure 3.26:

- a) Upward directed source should be mitigated with shielding where possible.
- b) In residential neighborhoods, outward directed source illumination should be mitigated with shielding where possible.

Figure 3.27:

- a) Use of architectural details, such as overhangs, notches, ornaments, and similar features can support mounting of building facade lighting.
- b) Light spill can be mitigated by louvers or baffles.

Figure 3.28:

- a) Light spill directly from luminaire that does not intersect the building should be substantially eliminated through the use of louvers or baffles.

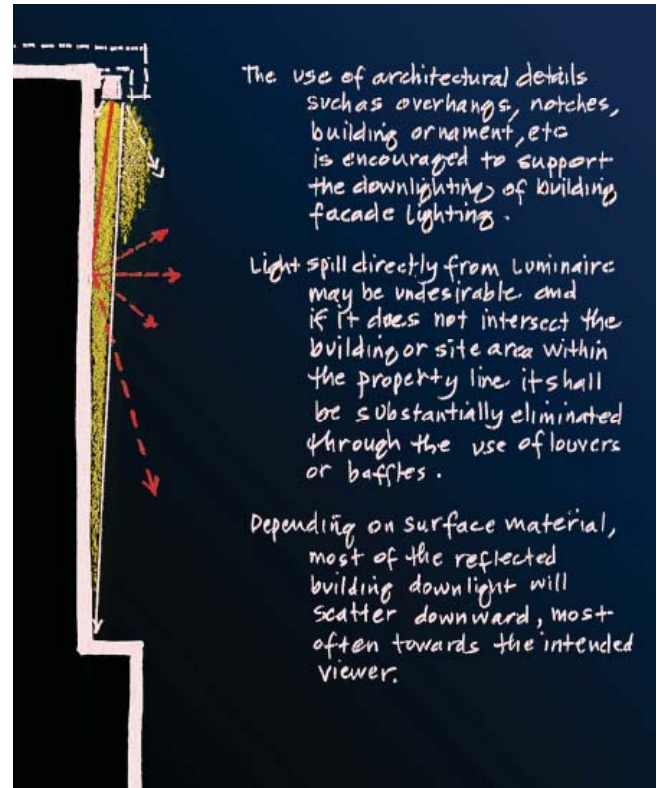


Figure 3.27: Conceptual diagram describing a building downlighting approach.

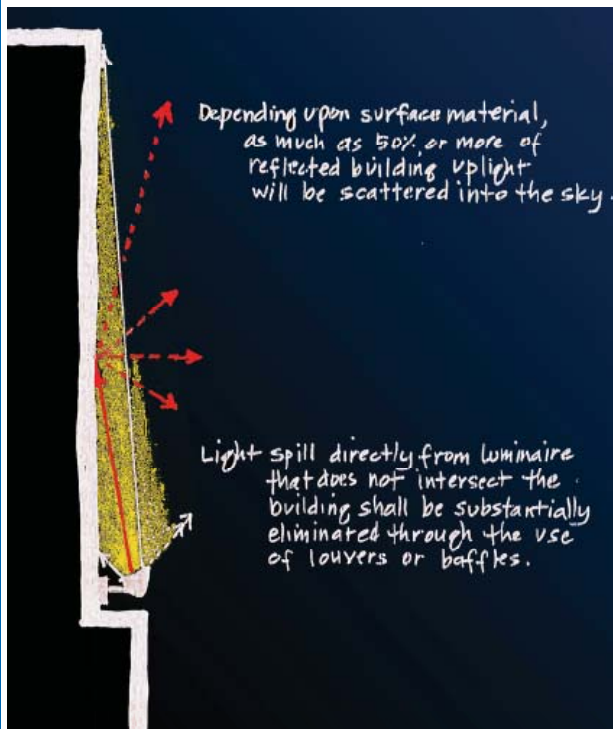


Figure 3.26: Conceptual diagram describing a building uplighting approach.

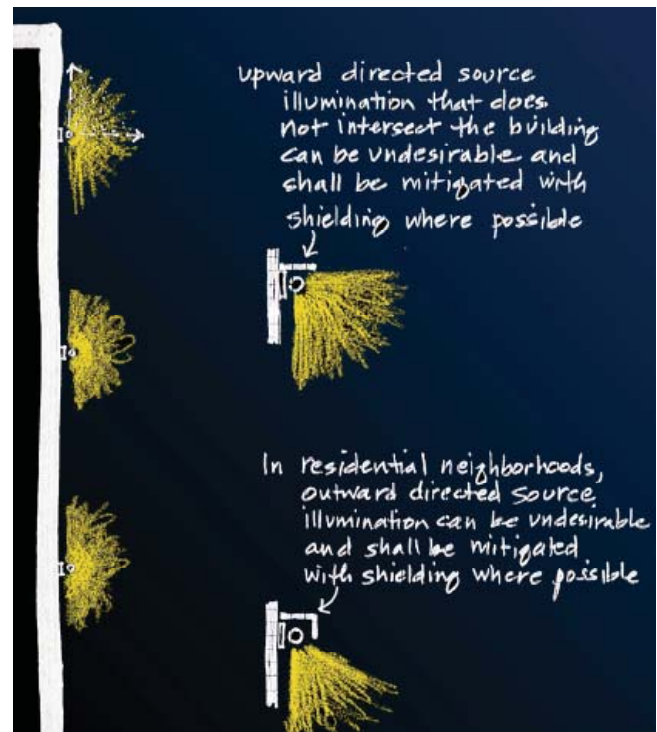


Figure 3.28: Conceptual diagram describing luminous building approach.

**SAN DIEGO DOWNTOWN LIGHTING PLAN**



# DOWNTOWN NEIGHBOR- HOODS

# 4

4.0	Downtown Neighborhoods	4-3
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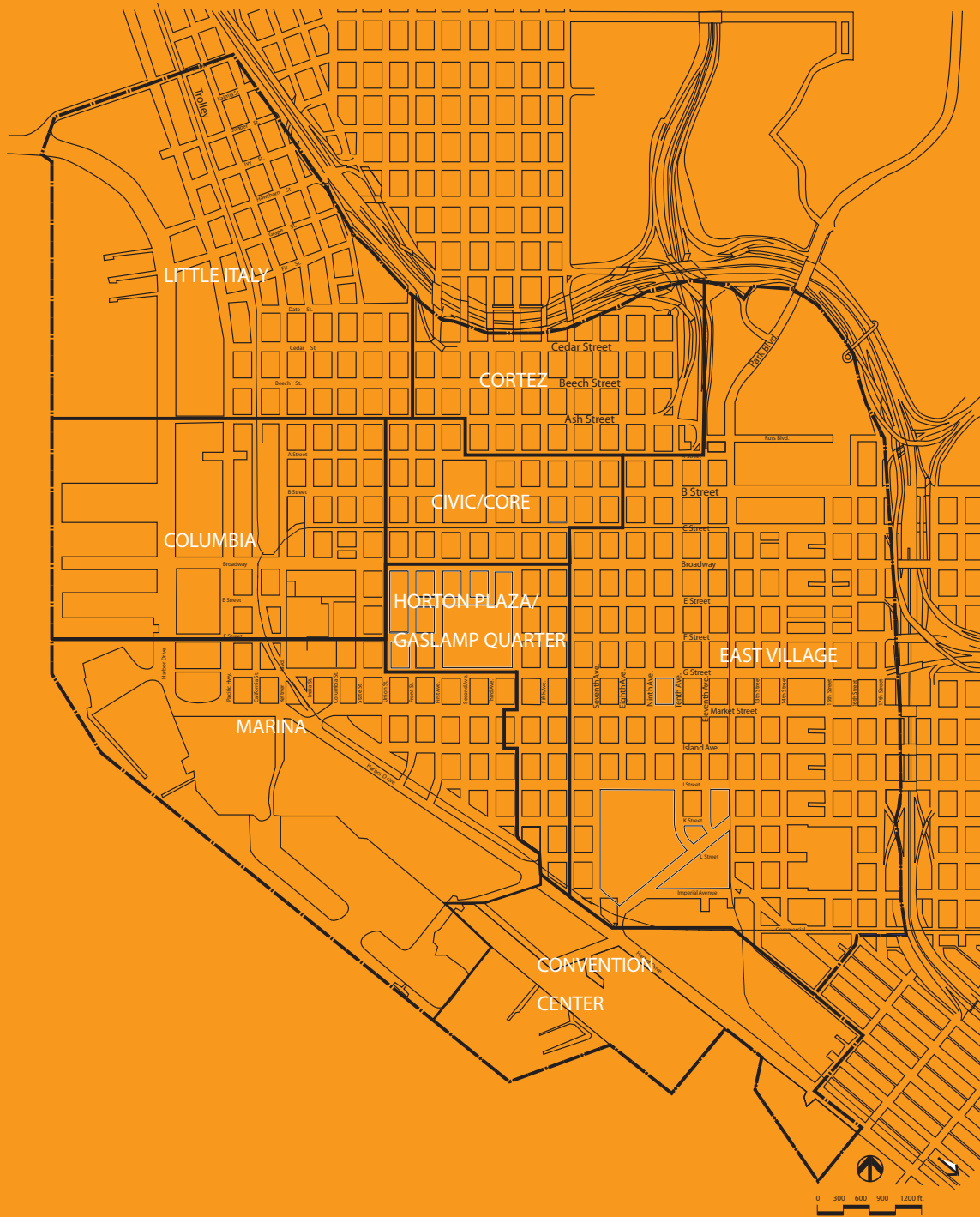


Figure 4-1: Neighborhood Boundary Map

# 4.0 DOWNTOWN NEIGHBORHOODS

## Intent Statement:

Each downtown neighborhood is unique and rich in its character and form the foundation of San Diego’s identity. The objective of this chapter is to outline consistent lighting strategies that will enhance the nighttime character of each neighborhood by promoting their individual main streets, neighborhood centers, parks and residential areas, while suggesting strategies to encourage walking between neighborhoods.

## Goals

1. Establish lighting guidelines that enhance the character of each neighborhood.
2. Promote compliance of BUG lighting and luminance ratings for the streetwall, mid-section and crown lighting areas of buildings per neighborhood (based on activity levels).

## Neighborhood Fabric

The DCP envisions downtown as a “collection of unique neighborhoods and subdistricts, reflecting variations in function, history, topography, location, architecture, building scale, and civic icons.” Many of downtown’s neighborhoods and districts, such as Marina, Gaslamp Quarter and Little Italy, are well developed. Others, such as the Core/Civic Center, East Village and Columbia, have historical assets, views, and large sections that will undergo future development.

The history and new growth of downtown offers numerous opportunities for expressions at night. As downtown development proceeds, various neighborhoods will evolve into “full-service districts,” according to the DCP, allowing for a full complement of amenities to enable walking-oriented lifestyles, mixing employment, residential, retail, cultural and open space.

The Lighting Plan’s objective is to emphasize unique qualities of both mature and evolving neighborhoods with safe, recognizable and inviting nighttime environments. This chapter describes the broad characteristics of each neighborhood, and outlines lighting goals and recommendations to guide the development of their evolving evening environments.



Photo 4.1: The community fabric of San Diego



## 4.1 TYPES OF LIGHTING

San Diego's nighttime lighting character can be conceptualized as three "layers" or types of light: safety, architectural, and special. The "layers of light" concept provides the basis for articulating lighting design guidelines that are unique to each downtown neighborhood, coupled with BUG criteria to minimize light pollution.

The layers of light approach references BUG criteria, allocating more light to specific activities per neighborhood based on commercial or residential buildings and /or street type, while conserving energy by allocating less light when it is not needed. Therefore, the amount and duration of light varies over time, driven by activities and by the unique character of each neighborhood. While all areas of downtown are envisioned to have a base level of "safety" lighting to illuminate the pedestrian environment, various neighborhoods should have different strategies for the lighting of buildings and public realm spaces. Residential neighborhoods should have more subdued lighting, while destination areas like the Gaslamp Quarter should be illuminated with more vibrancy.

- [Red] - SAFETY lighting represents a consistent and minimum level of lighting needed for safety during all evening hours when artificial light is needed to augment or replace natural light.
- [Green] - ARCHITECTURAL lighting enhances the expression and characteristics of the building that could be associated with specific districts, neighborhoods and places.
- [Blue] - SPECIAL lighting represents weekend, seasonal and special event lighting that reflects the lighting needs of increased social activity.

### District/Neighborhood Classifications

Based on existing land use analysis, each downtown neighborhood has been classified as Residential or Commercial as a basis of formulating lighting design guidelines based on activity.

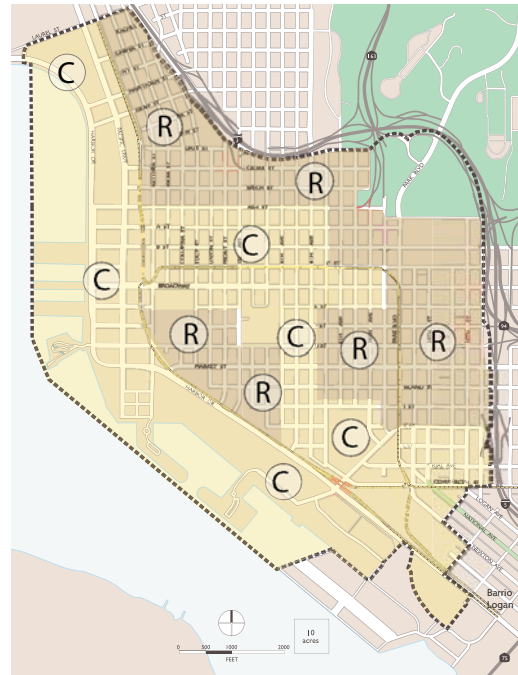


Figure 3.28: Neighborhood Classifications Chart.  
R = Residential C= Commercial

**Residential:** Little Italy, Cortez Hill, Marina District (inland of railroad tracks) East Village (north of Market Street and east of Park Boulevard.)

**Commercial:** The Core/Civic Center, Gaslamp Quarter District, Horton Plaza, Marina District (Southwest of railroad tracks) and Columbia. Note 1: The Marina District has two distinct use groups separated by railroad tracks bisecting the district. Note 2: East Village has two emerging characters - one north of Market Street and east of Park Boulevard and one near the ballpark. Each is unique enough to be addressed separately in this document.

Layers of Light Goals:

- Establish base lighting guidelines for each Neighborhood/District according to their individual character and activity.
- Establish lighting guidelines for streetwall, mid-section and crowns, based on neighborhood character and land use adjacencies.

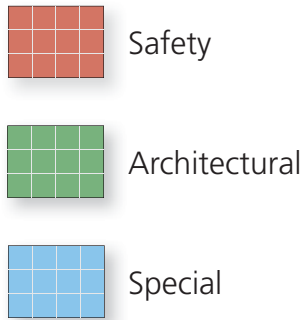


Figure 3.39: Light Layers Chart Key

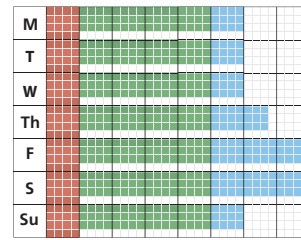


Figure 3.31: Conceptual Lighting Intensity Chart (Weekly Cycle)- Time frame is from Monday to Sunday

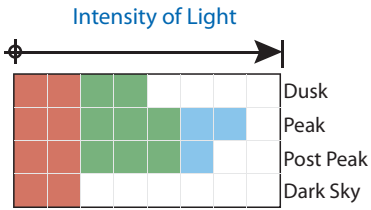


Figure 3.30: Night Cycle Chart - Time frame is from dusk to dawn on any evening

### Night Cycle

The Night Cycle can be conceptualized as the daily lighting cycle, from dusk to dawn, when artificial lighting replaces natural light to illuminate the continuation of activities of commerce and life. The basic cycle is comprised of four periods: Dusk, Commercial Peak, Post Peak and Dark Sky (Fig 3.30).

- DUSK lighting is transitional, gradually replacing natural light until sunset.
- PEAK is when the highest demand is placed on the lighting system.
- POST PEAK is the ramp down time of evening when most commercial and social functions wind down.
- DARK SKY is the late evening through early morning period when only minimal safety lighting is necessary.

The Night Baseline is based on wattage (and lighting intensity) for commercial and residential areas.

**Goals:**

- Encourage lighting to be layered or modulated to provide a baseline of lighting that can be adjusted in intensity.
- Establish a baseline condition for a typical weekday peak period in each neighborhood that aligns the lighting goals of that neighborhood with a primary emphasis on the quality of the luminous environment.
- Encourage layering of lighting effects that ramp up for the active period of the evening, ramp down for Post Peak activity and then ramp further down to safety minimums during the Dark Sky stage.

### The Weekly Cycle

During the course of a week, lower light intensity transitions to higher levels by the end of the work week. Different Neighborhoods/Districts have different levels of activity, but all tend to be at greater levels on Friday and Saturday, while reducing intensity on Sunday (Fig. 3.31). The character lighting of each District/Neighborhood should reflect energy in proportion to the size and activity of their commercial areas balancing weekday lighting activity with respect for adjacent residential developments.

## 4.2 LITTLE ITALY

### Lighting Goals:

1. The use of festoon lighting with LED technology is encouraged as a goal in the near future. The new LED lights should be of a warm color, similar to the existing festoon lighting.
2. The use of pale to saturated blue washes of light on facades is encouraged along India Street, reinforcing the warmth of the festoons and the street's connection to the blue gateway sign.
3. A simple "necklace" of festoon lights is encouraged to be added onto existing streetlights beyond India Street, linking it to the Columbia/Core neighborhood.
4. Light the historic Star of India windjammer ship with a lighting system that allows color change over time.
5. The sailing community is encouraged to implement an at-anchor program that highlights the beauty of the masts of the boats with a subtle wash of saturated colored light onto the masts.
6. Special/temporary annual lighting events are encouraged.

Little Italy is a mature mixed-use fine grain residential neighborhood with a strong existing identity. Informal strings of festoon lights are strung from lamp post to lamp post along India Street. A number of retailers and other commercial venues have layered additional lighting with stylistic wall-mounted fixtures and festoon lighting on canopies of building facades reinforcing Little Italy's nighttime identity.

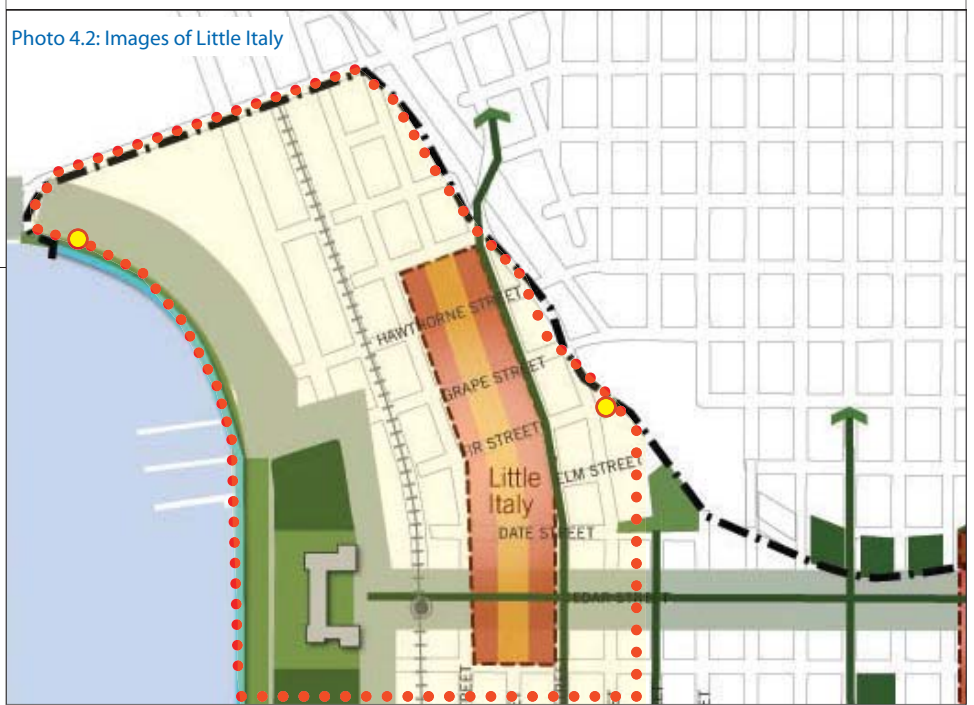
Within the Little Italy District, the historic Star of India and County Administration Building are well-lighted and mark Little Italy's waterfront presence on the bay. The "Little Italy" gateway sign announces the entry into the commercial core of the neighborhood along India Street. Future lighting in Little Italy should continue to reinforce the character and enhance the safety of the neighborhood.



Photo 4.2: Images of Little Italy



Figure 4.2: Vicinity Map



- Gateway Site
- Broadway
- Green Street
- Green Street - Pedestrian Only
- Neighborhood Center/Main Street
- Trolley
- Existing Public Parks and Open Spaces
- Proposed/Planned Public Parks and Open Spaces
- Downtown Green Loop
- Waterfront Promenade
- Selected Downtown Landmarks

Figure 4.3: Neighborhood Main Streets and Open Space Map



LIGHTING CONCEPTS

CONCEPT BOX

Consistent and moderate level of lighting during the weekday, with increased intensity during the week-ends for festivals and events. Lighting is prioritized along the streetwall and crowns, but should be limited at the mid-sections by residential adjacencies.

Safety lighting [1] could include articulated lighting along the streetwall such as [2] lighted street trees and [3] festoon lighting.

Architectural lighting could minimize glare with exterior mounted fixtures

that are aimed downwards [4-5] and provide light onto the sidewalk. [6]

Little Italy's established annual arts and cultural events could leverage lighting ideas, such as cinema projections [7], lighted attachments that span the street [8] and projected lighted art [9].

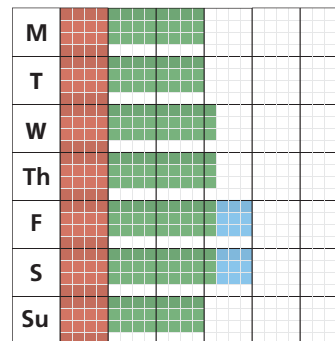
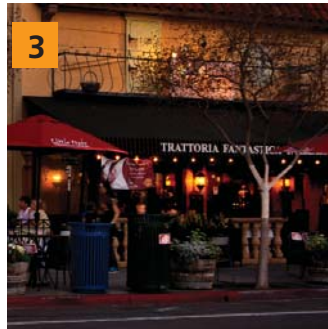
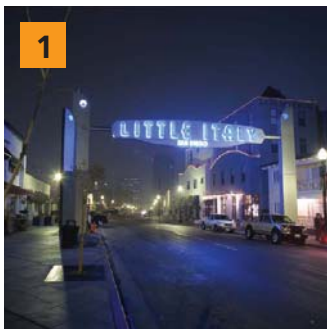


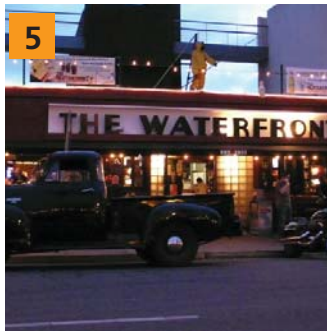
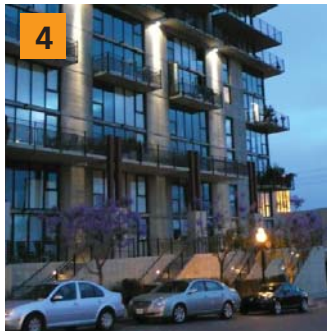
Figure 4.4: Conceptual Lighting Intensity Neighborhood Chart

PHOTO REFERENCE

**SAFETY**  
Street Activity  
Walking



**ARCHITECTURAL**  
Massing  
Details  
Scale  
Fenestration



**SPECIAL**  
Seasonal  
Celebration  
Festival  
Art

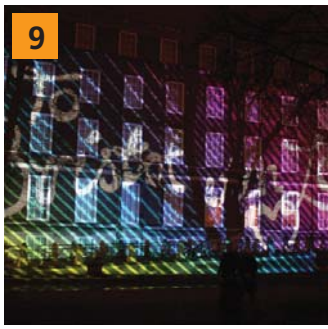


Photo 4.3: Photo Reference Diagram



# 4.2 LITTLE ITALY

## Neighborhood Lighting Activity Objectives:

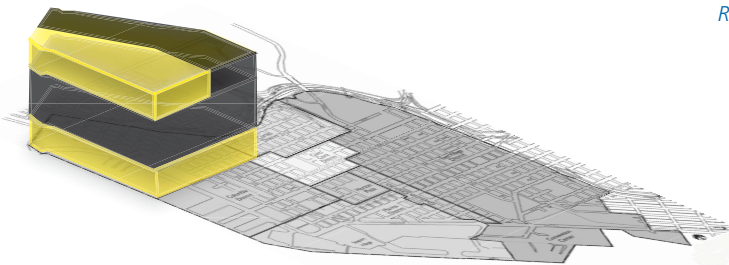
## Building Lighting Activity:

### Crown

Light building crowns west of Pacific Highway

### Mid Section

Residential adjacency



## Lighting Activity by Neighborhood

### KEY

- Illumination
- Limited Illumination

## Streetwall

## Hardscape

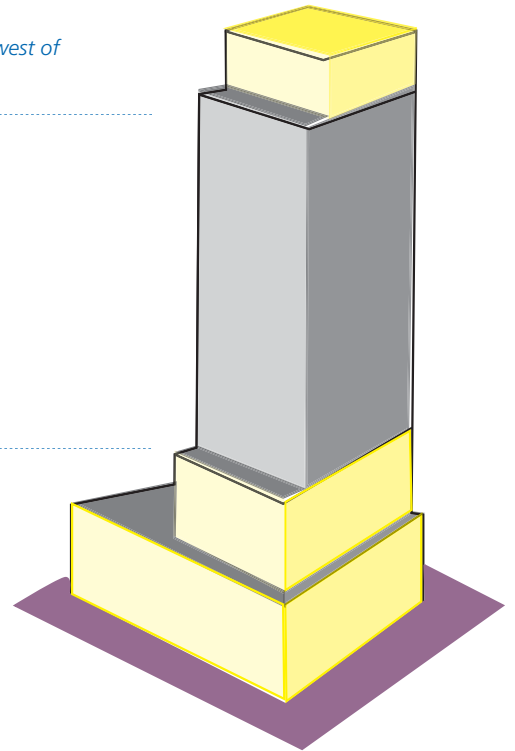


Figure 4.5: Neighborhood Lighting Activity

## CENTRE CITY GREEN - GREEN BUILDING INCENTIVE PROGRAM

The design shall comply with Title 24 for energy and with the City of San Diego curfew requirements. In reference to these codes, the building lighting shall follow the schedule below. To achieve reduced energy consumption, dimming fixtures is encouraged; however, switching lights off is acceptable as an alternative.

WEEKDAY	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	40%	20%
Facade - Mid-Section	40%	20%
Facade - Streetwall	60%	50%
Hardscape	60%	50%

WEEKEND	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	60%	20%
Facade - Mid-Section	60%	20%
Facade - Streetwall	100%	50%
Hardscape	100%	50%

### Notes

- Add 10% if within 20' of an intersection (Do not exceed 100%).
- If the property is on the Waterfront, an additional 20% of the energy allowance is allowed, but cannot exceed 100%.
- \* Commercial business may be allowed to stay on until business closes.
- See Centre City Green - Green Building Incentive Program for submission requirements.

Table 1: Energy Consumption Schedule

4.2.1 Little Italy Lighting Guidelines



Crown Lighting

4.2-1.A Building crown lighting is encouraged along commercial streets and the waterfront. Color is appropriate. High efficiency warm LED lighting is encouraged to be shielded at the top of roof parapets or shielded light at the wall at roof parapets.

4.2-1.B Lighting strategies should emphasize the architectural composition of the building at the tower crown.

**BUG + LUMINANCE**  
 Luminance Maximum = 10.0 cd/sq.m.  
 All luminaires at buildings west of Pacific Highway should comply with BUG B1/U2/G1. Luminaires at buildings east of Pacific Highway should match Cortez Hill crown lighting BUG rating.

Mid-Section Lighting

4.2-1.C Balcony lighting should be aimed downwards and towards the building.

4.2-1.D Mid-section lighting above the streetwall is discouraged adjacent to residential units.

**BUG + LUMINANCE**  
 Luminance Maximum = 10.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G1

Streetwall Lighting

4.1-1.E Streetwall lighting should be active and engaging at retail locations. Architectural feature lighting that supports the “blue” district signature color and shielded retail signage lighting is encouraged. Warm LED festoon lighting is encouraged to be added to retail street lighting and second-story floor level to highlight the retail area. Retail storefront lighting should use high CRI & efficiency sources and awnings.

**Hardscape Notes:**  
 a. Buildings located on India or Cedar streets may increase the BUG values by 1 but not exceed 3, or the maximum BUG values allowed by CalGreen.  
 b. Buildings located on India or Cedar streets may increase the Luminance value by 5 cd/m.

**BUG + LUMINANCE**  
 Luminance Maximum = 15.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G2

Hardscape Lighting

Luminance Maximum = 15.0  
 All luminaires should comply with BUG B1/U2/G2

Figure 4.6: Section

## 4.3 COLUMBIA

### Lighting Goals:

1. Celebrate the waterfront edge of the city. All developments facing Harbor Drive should develop lighting plans that address the waterfront edge and contribute to the lighting of the streetwall.
2. Building lighting systems with flexible controls capable of dynamic lighting expressions that can accommodate holidays and special events are encouraged.
3. Unique lighting programs for the district's focal structures are encouraged: Museum of Contemporary Art, USS Midway, the Cruise Ship Terminal, Santa Fe Depot and Electra (Historic Base).

Situated on the western edge of downtown, Columbia's distinguishing feature is its waterfront connection and diverse neighborhood comprised of office buildings, hotels, retail, residential development and museums. It is home to many downtown high-rises including One America Plaza, Emerald Plaza, First National Bank Center, and a number of residential towers. The Columbia District includes defining intersections of Harbor Drive and Broadway (San Diego's "front door"), Pacific Highway (Historic 101), and gateway structures such as the Santa Fe Depot and the Cruise Ship terminal.

The NEVP, Cruise Ship Terminal Expansion, Pacific Gateway and Lane Field developments will play a key part of Downtown's nighttime signature lighting design.



Photo 4.4: Images of Columbia

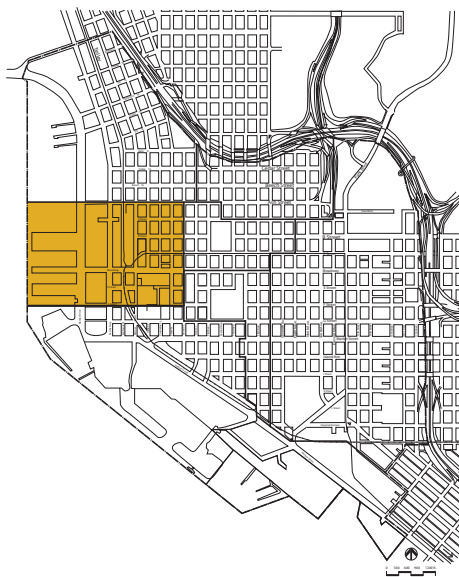


Figure 4.7: Vicinity Map



Figure 4.8: Neighborhood Main Streets and Open Space Map

LIGHTING CONCEPTS

CONCEPT BOX

Greater activity along the waterfront will require higher lighting intensity emphasizing the Architectural and Special lighting layer.

Safety lighting includes enhanced median and mid-block street lighting along Broadway, which will be implemented by the NEVP [1]. Additional safety lighting can include pedestrian lighting evenly spaced

along promenades with subtle highlights of background buildings [2].

Architectural lighting can be more dynamic with modulation of color connecting the crown with the base [3]. Media-based lighting applications adjacent to public spaces [4] coupled with lighted art, provides for pedestrian wayfinding [5].

Special lighting for celebrations and/or seasonal events could occur at a smaller scale, such as lighting of the Midway [6] or on a much larger scale that could include multiple buildings [7-8].

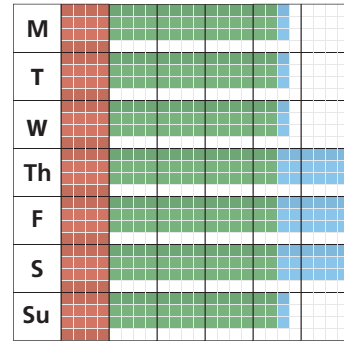



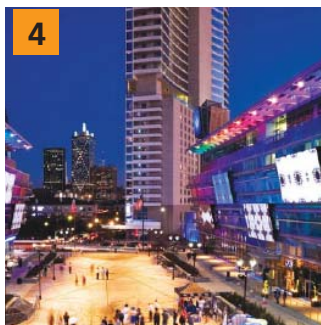
Figure 4.9: Conceptual Lighting Intensity Neighborhood Chart

PHOTO REFERENCE

**SAFETY**  
Street Activity  
Walking




**ARCHITECTURAL**  
Massing  
Details  
Scale  
Fenestration

**SPECIAL**  
Seasonal  
Celebration  
Festival  
Art




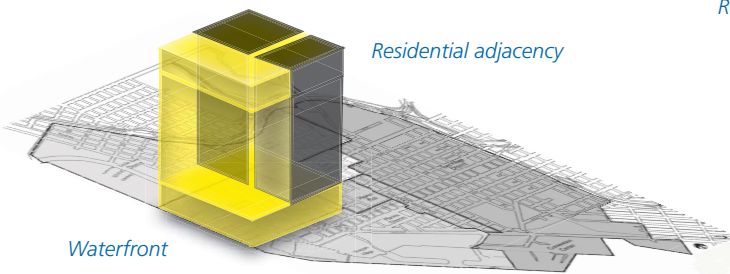

Photo 4.5: Photo Reference Diagram



# 4.3 COLUMBIA

Neighborhood Lighting Activity Objectives:

Building Lighting Activity:



Lighting Activity by Neighborhood

**KEY**

- Illumination
- Limited Illumination

Crown

Mid Section  
*Residential adjacency*

Streetwall

Hardscape

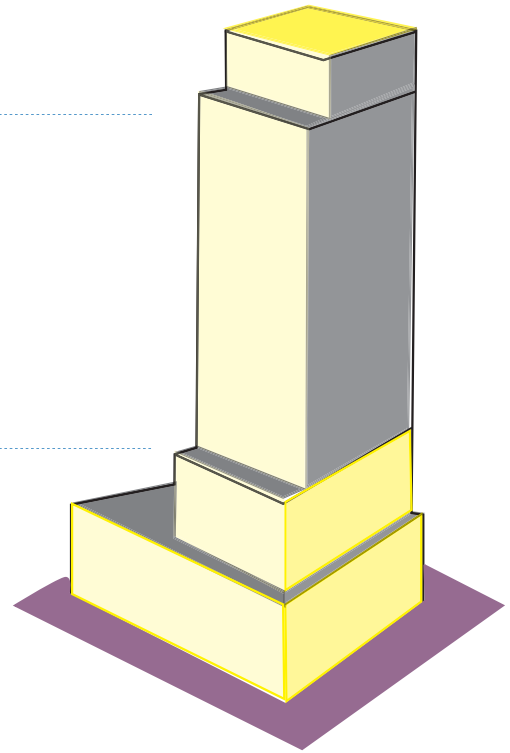


Figure 4.10: Neighborhood Lighting Activity

## CENTRE CITY GREEN - GREEN BUILDING INCENTIVE PROGRAM

The design shall comply with Title 24 for energy and with the City of San Diego curfew requirements. In reference to these codes, the building lighting shall follow the schedule below. To achieve reduced energy consumption, dimming fixtures is encouraged; however, switching lights off is acceptable as an alternative.

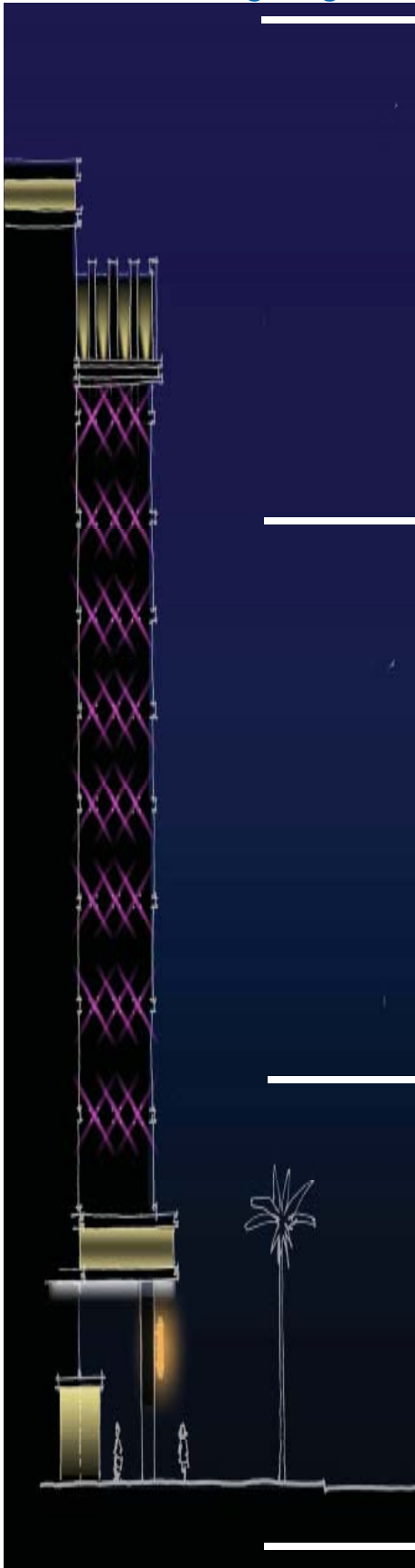
WEEKDAY	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	60%	20%
Facade - Mid-Section	40%	20%
Facade - Streetwall	80%	50%
Hardscape	80%	50%

WEEKEND	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	80%	20%
Facade - Mid-Section	80%	20%
Facade - Streetwall	100%	50%
Hardscape	100%	50%

- Notes**
- Add 10% if within 20' of an intersection (Do not exceed 100%).
  - If the property is on the Waterfront, an additional 20% of the energy allowance is allowed, but cannot exceed 100%.
  - \* Commercial business may be allowed to stay on until business closes.
  - See Centre City Green - Green Building Incentive Program for submission requirements.

Table 2: Energy Consumption Schedule

4.3.1 Columbia Lighting Guidelines



Crown Lighting

4.3-1.A All developments facing Harbor Drive should develop lighting plans that contribute to a luminous architectural expression at the waterfront.

4.3-1.B Lighting strategies should emphasize the architectural composition of the building, especially at the tower crown.

4.3-1.C Crown illumination should identify buildings in this area that have special interest or significance.

**BUG + LUMINANCE**  
 Luminance Maximum = 15.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G2 west of Pacific Highway and facing Broadway Street.

Mid-Section Lighting

4.3-1.D Mid-section of tower lighting is encouraged west of Pacific Highway and along Broadway.

4.3-1.E Mid-section lighting is only recommended for buildings with non-specular surfaces, west of Pacific Highway and is strongly discouraged when adjacent to residential uses. The mid-tower lighting should focus on the building, emphasizing the architectural articulations.

**BUG + LUMINANCE**  
 Luminance Maximum = 10.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G1 west of Pacific Highway and facing Broadway. Buildings east of Pacific Highway and with facades not facing Broadway should comply with BUG B1/U1/G1.

Streetwall Lighting

4.3-1.F Celebrate the waterfront edge: Streetwall lighting should include lighting that articulates the structure and massing of a building, as well wayfinding elements, such as entries and lobbies. Consideration should be given to lighting of trees and walking paths located directly adjacent to the building.

**Hardscape Notes:**  
 a. Buildings located on Broadway may increase the BUG values by 1 but not exceed 3, or the maximum BUG values allowed by CalGreen.  
 b. Buildings located on Broadway may increase the Luminance value by 5 cd/m.

**BUG + LUMINANCE**  
 Luminance Maximum = 20.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U3/G2

Hardscape Lighting

Luminance Maximum = 20.0  
 All luminaires should comply with BUG B1/U3/G2

Figure 4.11: Section

## 4.4 MARINA-RESIDENTIAL AREA

### Lighting Goals:

1. Building-mounted lanterns are encouraged with muted diffusers or grillwork so that the lanterns are not too bright.
2. Building-mounted lanterns should wash light onto the building, in addition to being a decorative-lighted object.
3. Street trees are encouraged to be lighted during seasonal events.

The area located north and east of Harbor Drive in the Marina District is an established urban residential neighborhood that is defined by Pantoja Park, Children’s Museum Park, Children’s Park/Civic Pond and the Martin Luther King, Jr. Promenade. Market Street serves as the primary central axis that connects the neighborhood to Horton Plaza (to the east) and to the waterfront (to the west).

The DCP builds upon the residential character of the neighborhood with Green Streets and a Neighborhood Center that will require improved pedestrian lighting with higher color rendering for safety. Existing parks will also require enhanced lighting. Streetwall lighting that highlights the building entry and base of the building, with subtle light spillage onto the sidewalk area should be included in future designs and retrofits of buildings.



Photo 4.6: Images of Marina

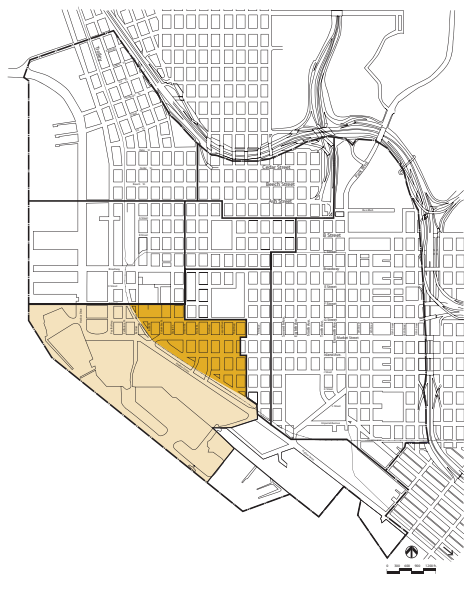


Figure 4.12: Vicinity Map



- |                                 |   |
|---------------------------------|---|
| Gateway Site                    | Existing Public Parks and Open Spaces         |
| Broadway                        | Proposed/Planned Public Parks and Open Spaces |
| Green Street                    | Downtown Green Loop                           |
| Green Street - Pedestrian Only  | Waterfront Promenade                          |
| Neighborhood Center/Main Street | Selected Downtown Landmarks                   |
| Trolley                         |   |

Figure 4.13: Neighborhood Main Streets and Open Space Map

LIGHTING CONCEPTS

CONCEPT BOX

Minimizing visual contrast of lighting along the streetwall for wayfinding provides for greater safety in more residential areas [1].

Architectural lighting should be limited to the streetwall and crown at a lower intensity [2]. Green Streets proposed at E, Union and Columbia streets and

lighting upgrades to existing parks provide the opportunity to install broad spectrum luminaires that have a white light (such as induction or LED) that provide for greater visual clarity.

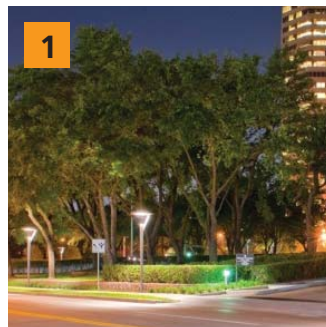
Special lighting on buildings is not compatible in this residential area of downtown, but can occur with seasonal lighting of street trees [3] or with lighted landscape elements that provide safety by adding additional light in the public realm.

M						
T						
W						
Th						
F						
S						
Su						

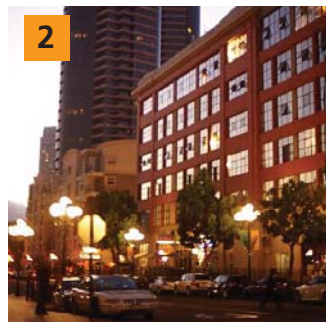
Figure 4.14: Conceptual Lighting Intensity Neighborhood Chart

PHOTO REFERENCE

**SAFETY**  
Street Activity  
Walking



**ARCHITECTURAL**  
Massing  
Details  
Scale  
Fenestration



**SPECIAL**  
Seasonal  
Celebration  
Festival  
Art



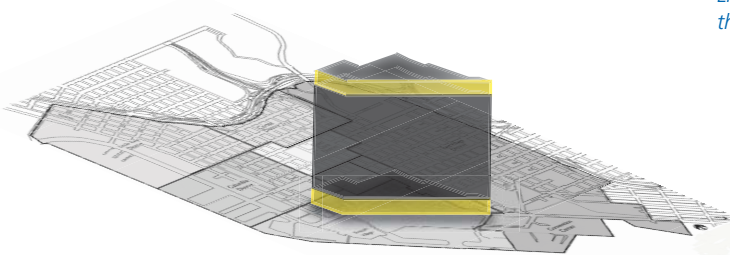
Photo 4.7: Photo Reference Diagram



# 4.4 MARINA – RESIDENTIAL AREA

Neighborhood Lighting Activity Objectives:

Building Lighting Activity:



Lighting Activity by Neighborhood

**KEY**

- Illumination
- Limited Illumination

Crown

Mid Section

Limited lighting above the streetwall

Streetwall

Hardscape

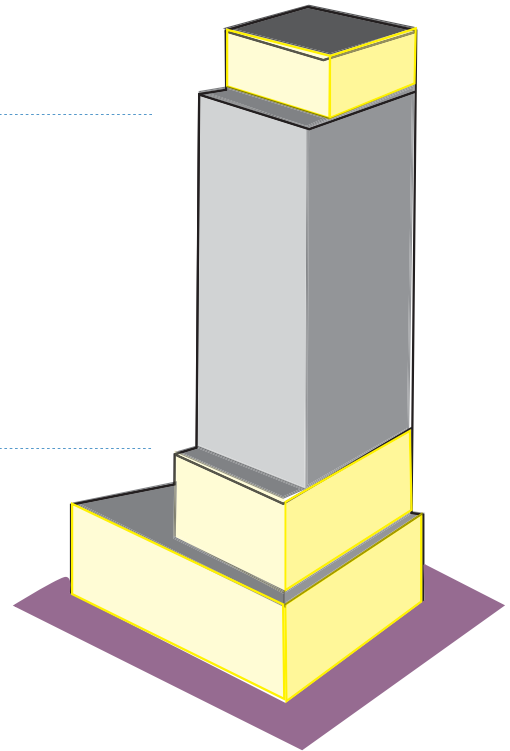


Figure 4.15: Neighborhood Lighting Activity

## CENTRE CITY GREEN – GREEN BUILDING INCENTIVE PROGRAM

The design shall comply with Title 24 for energy and with the City of San Diego curfew requirements. In reference to these codes, the building lighting shall follow the schedule below. To achieve reduced energy consumption, dimming fixtures is encouraged; however, switching lights off is acceptable as an alternative.

WEEKDAY	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	40%	20%
Facade - Mid-Section	40%	20%
Facade - Streetwall	60%	60%
Hardscape	60%	60%

WEEKEND	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	60%	20%
Facade - Mid-Section	60%	20%
Facade - Streetwall	80%	50%
Hardscape	80%	50%

**Notes**

- Add 10% if within 20' of an intersection (Do not exceed 100%).
- If the property is on the Waterfront, an additional 20% of the energy allowance is allowed, but cannot exceed 100%.
- \* Commercial business may be allowed to stay on until business closes.
- See Centre City Green - Green Building Incentive Program for submission requirements.

Table 3: Energy Consumption Schedule

4.4.1 Marina (Residential Area) Lighting Guidelines



Crown Lighting

4.4-1.A Integrated building crown up-lighting that is captured by architectural detail is encouraged.

4.4-1.B Colored light and dynamic light effects are discouraged when there are residential adjacencies.

**BUG + LUMINANCE**  
 Luminance Maximum = 10.0 cd/sq.m.  
 All luminaires shall comply with BUG B1/ U2/ G1

Mid-Section Lighting

4.4-1.C Balcony lighting should be shielded and integrated with the architecture. This will minimize glare into neighboring residential and hotel units.

4.4-1.D Mid-section lighting above the streetwall is discouraged for buildings adjacent to residential developments.

**BUG + LUMINANCE**  
 Luminance Maximum = 10 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G1.

Streetwall Lighting

4.4-1.E Streetwall lighting in residential areas should be integrated with the architecture. This will minimize glare into neighboring residential and hotel units.

4.4-1.F Maintain the softly lighted character of the neighborhood with lighting approaches that use subtle washes of light onto architectural elements, such as columns and pilasters.

**← Hardscape Notes:**  
 a. Buildings within the designated "Main Street" for the Neighborhood may increase the BUG values by 1 but not exceed 3, or the maximum BUG values allowed by CalGreen.  
 b. Buildings within the designated "Main Street" for the Neighborhood may increase the Luminance value by 5 cd/m.

**BUG + LUMINANCE**  
 Luminance Maximum = 15.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G2

Hardscape Lighting

Luminance Maximum = 15.0  
 All luminaires should comply with BUG B1/U2/G2

Figure 4.16: Section

## 4.5 MARINA-COMMERCIAL AREA

### Lighting Goals:

1. Building lighting systems with flexible controls capable of dynamic expressions for festivals, holidays and special events are encouraged.
2. Unique lighting programs for the important features of the commercial area of the Marina District are encouraged, such as the historic Old Police Headquarters building, the facade of the first Hyatt tower, and the fabric roof of the Convention Center. Artistic lighting treatments should be explored.
3. The sailing community should implement an in-dock program that highlights the beauty of the masts of the boats in both marinas with a subtle wash of saturated colored light onto the masts.
4. Lighting of the Coronado Bridge should be envisioned as part of the signature downtown skyline.

The commercial area of the Marina District, located west and south of Harbor Drive, is bookended by the Convention Center and Seaport Village with high-rise resort hotels and two bustling marinas in between. There is one marina for leisure boats and one for fishing fleets. The lighted frontages of these buildings defines the first impressions of downtown’s skyline at night from the bay with ornamental-lighted building crowns and hotel towers. The future Pacific Gateway hotel, office and retail development and Seaport Village renovation/expansion will provide further opportunities for defining the skyline.

The Lighting Plan seeks to enhance the signature elements of existing and new development along the waterfront with specific recommendations to light buildings while minimizing light pollution and glare.

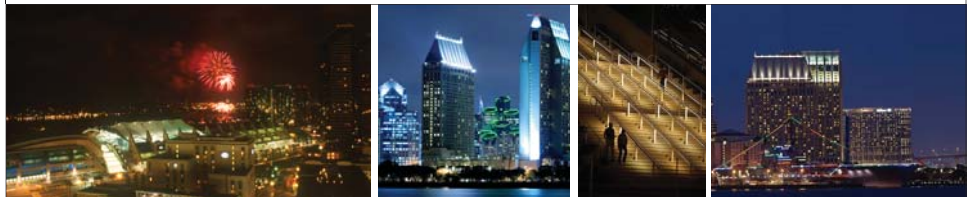


Photo 4.8: Images of Marina

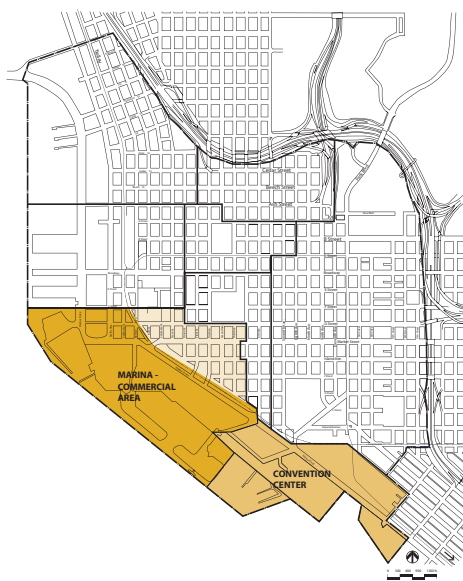


Figure 4-17: Vicinity Map



Figure 4.18: Neighborhood Main Streets and Open Space Map

LIGHTING CONCEPTS

CONCEPT BOX

Increased light levels along the street wall, mid-section and crown are encouraged to support the activity associated with the commercial uses of this area of downtown and waterfront frontage.

Safety lighting should support circulation and wayfinding in the pedestrian promenades located along the waterfront, connecting Seaport Village and Embarcadero Park with the proposed Convention Center expansion. Such treatments should include pedestrian

light poles [1] and architectural lighting of back-drop buildings [2].

Architectural lighting should emphasize the massing and elements of buildings that face the bay with lighting treatments that connect the crown to the streetwall [4,5] with subtle color modulation [3].

Special lighting treatments could include lighted projections [6] for special or seasonal events and lighting of multiple buildings along the waterfront [7,8].

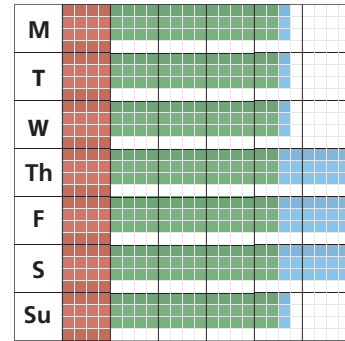
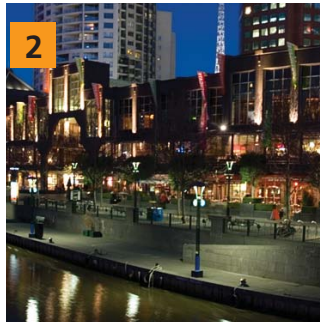
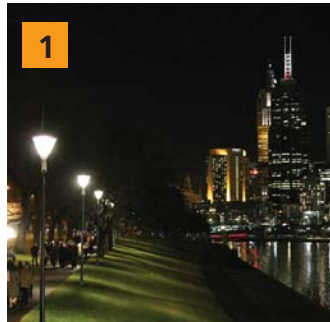



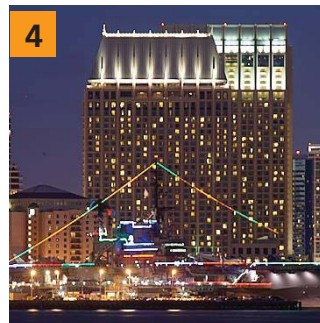
Fig 4.19: Conceptual Lighting Intensity Neighborhood Chart

PHOTO REFERENCE

**SAFETY**  
Street Activity  
Walking

**ARCHITECTURAL**  
Massing  
Details  
Scale  
Fenestration

**SPECIAL**  
Seasonal  
Celebration  
Festival  
Art

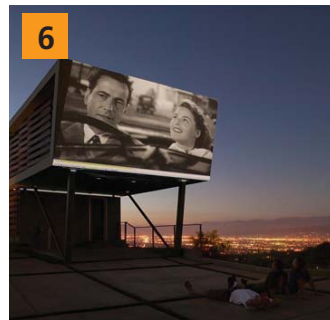



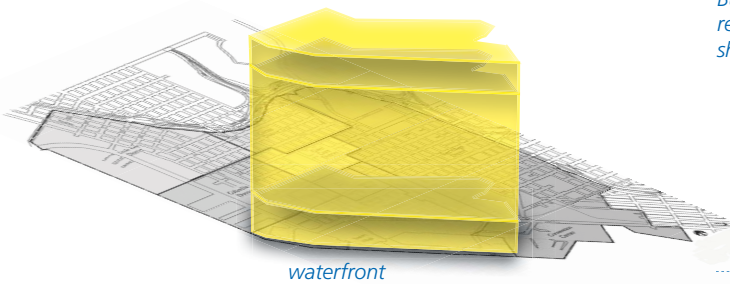
Photo 4.9: Photo Reference Diagram



# 4.5 MARINA – COMMERCIAL AREA

## Neighborhood Lighting Activity Objectives:

## Building Lighting Activity:



Lighting Activity by Neighborhood

### KEY

- Illumination
- Limited Illumination

### Crown

### Mid Section

*Building mid-sections directly facing residential areas should not be lighted*

### Streetwall

### Hardscape

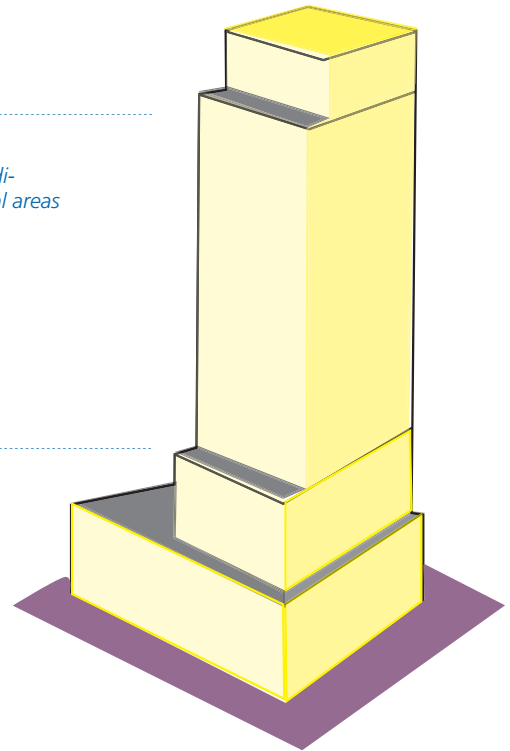


Figure 4.20: Neighborhood Lighting Activity

## CENTRE CITY GREEN – GREEN BUILDING INCENTIVE PROGRAM

The design shall comply with Title 24 for energy and with the City of San Diego curfew requirements. In reference to these codes, the building lighting shall follow the schedule below. To achieve reduced energy consumption, dimming fixtures is encouraged; however, switching lights off is acceptable as an alternative.

WEEKDAY	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	60%	20%
Facade - Mid-Section	60%	20%
Facade - Streetwall	80%	50%
Hardscape	80%	50%

WEEKEND	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	80%	20%
Facade - Mid-Section	80%	20%
Facade - Streetwall	100%	50%
Hardscape	100%	50%

### Notes

- Add 10% if within 20' of an intersection (Do not exceed 100%).
- If the property is on the Waterfront, an additional 20% of the energy allowance is allowed, but cannot exceed 100%.
- \* Commercial business may be allowed to stay on until business closes.
- See Centre City Green - Green Building Incentive Program for submission requirements.

Table 4: Energy Consumption Schedule

4.5.1 Marina (Commercial) Lighting Guidelines



Crown Lighting

4.5-1.A Lighting strategies should emphasize the complete composition of the building and defining architectural features, especially for buildings adjacent to the bay.

4.5-1.B Uplighting should be aimed towards the building.

4.5-1.C Colored lighting and subtle modulation of patterns are appropriate for waterfront building crowns.

**BUG + LUMINANCE**  
 Luminance Maximum = 15.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G2

Mid-Section Lighting

4.5-1.D Lighting of the mid-section in addition to building bases and crowns is encouraged for buildings between the bay and Harbor Drive and between the bay and Pacific Highway, north of Harbor Drive. However, mid-section lighting is strongly discouraged when adjacent to residential use.

**BUG + LUMINANCE**  
 Luminance Maximum = 15.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G2.

Streetwall Lighting

4.5-1.E Streetwall lighting should emphasize main architectural and structural elements, such as columns and pilasters terminating at the ground level.

4.5-1.F Lighting strategies should emphasize architectural elements that connect the streetwall with the mid-section and crown.

4.5-1.G Lobby entries should be highlighted.

**BUG + LUMINANCE**  
 Luminance Maximum = 20.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U3/G2

**Hardscape Notes:**  
 a. Buildings located on Harbor Drive may increase the BUG values by 1 but not exceed 3, or the maximum BUG values allowed by CalGreen.  
 b. Buildings located on Harbor Drive may increase the Luminance value by 5 cd/m.

Hardscape Lighting

Luminance Maximum = 20.0  
 All luminaires should comply with BUG B1/U3/G2

Figure 4.21:Section

## 4.6 CORTEZ

### Lighting Goals:

1. Architectural lighting that emphasizes and maintains the residential identity of Cortez Hill, east of 6th Avenue and north of A Street is encouraged: at the streetwall, articulating the architectural elements and encouraging the use of wall-mounted lanterns with articulated armatures.
2. Maintain the historic El Cortez building and sign as the neighborhood's name-sake landmark.
3. Color changing or projected lighting effects on the El Cortez as a part of a festival or special event should be considered.
4. Update the Streetscape Manual to include special pedestrian light fixtures along 6th Avenue that link Balboa Park with downtown.

Cortez is a mature neighborhood that enjoys a unique perspective of the city at the peak of the hill overlooking every direction from the bay to Balboa Park. Sixth Avenue is the defined main street for this neighborhood and a gateway into downtown, bisecting the western lower slopes from the hilltop portion to the east. Low- to mid-rise mixed-use developments dominate the neighborhood west of Sixth Avenue. The east hilltop is predominantly residential with some hospitality. The famous "El Cortez" sign is located here as the nighttime signature for the neighborhood and a key feature of the downtown skyline. Lighting that emphasizes the character of the residential neighborhood should be planned in future and existing buildings.



Photo 4.10: Images of Cortez

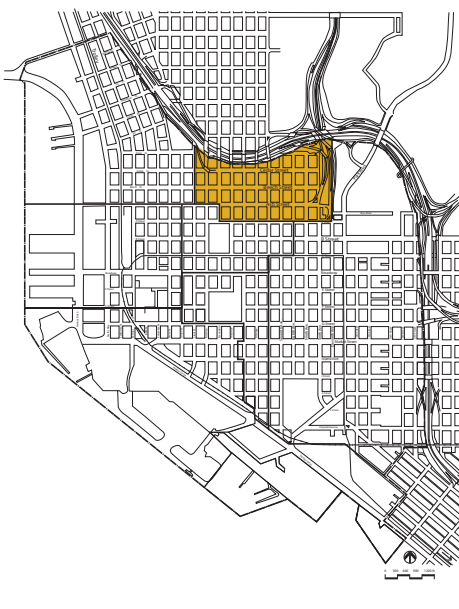
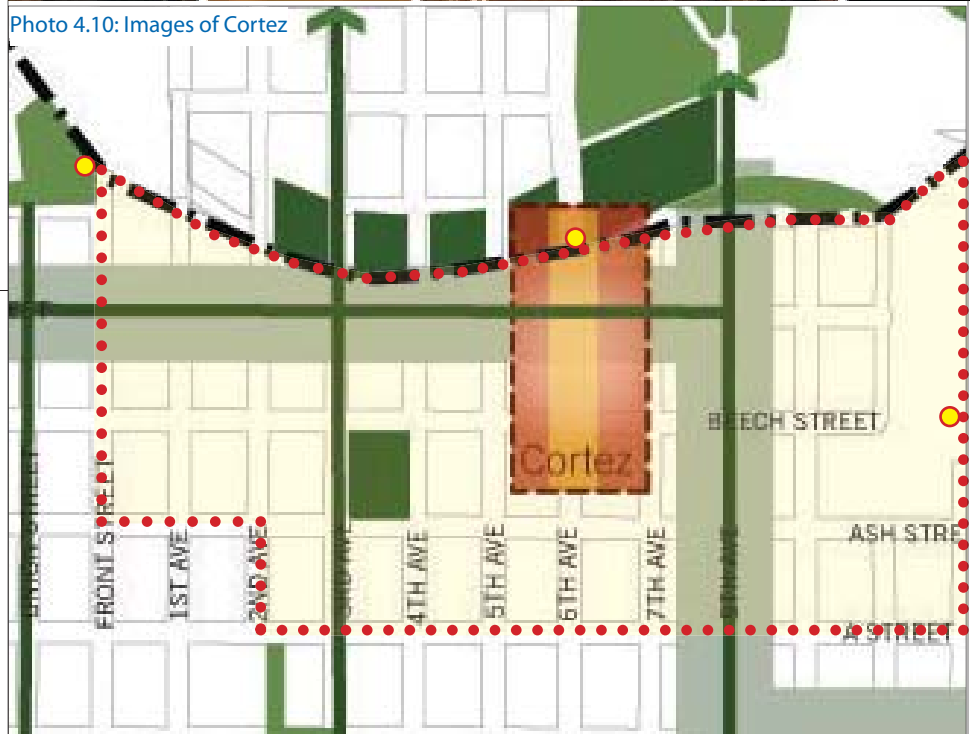


Figure 4.22: Vicinity Map



- |                                 |   |
|---------------------------------|---|
| Gateway Site                    | Existing Public Parks and Open Spaces         |
| Broadway                        | Proposed/Planned Public Parks and Open Spaces |
| Green Street                    | Downtown Green Loop                           |
| Green Street - Pedestrian Only  | Waterfront Promenade                          |
| Neighborhood Center/Main Street | Selected Downtown Landmarks                   |
| Trolley                         |   |

Figure 4.23: Neighborhood Main Streets and Open Space Map

LIGHTING CONCEPTS

CONCEPT BOX

Less lighting intensity is needed in the more pronounced residential areas of the Cortez Neighborhood, located east of 6th Avenue and north of A Street.

Lighting should emphasize the streetwall and public realm for wayfinding and greater safety. Safety lighting can occur with broad spectrum luminaires that have a white light (such as induction or LED) that provide for greater visual clarity [1]. Further enhancement with wall-

mounted fixtures [2] [3] can be integrated with the design of the building. Architectural lighting should be limited to the streetwall and balconies [4] and at crown at lower intensities that do not compete with the El Cortez sign [5].

Special lighting can include the lighting of street trees [6].

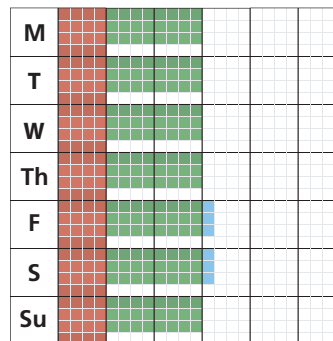
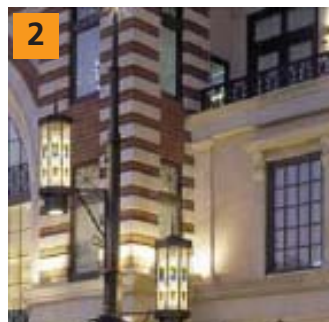
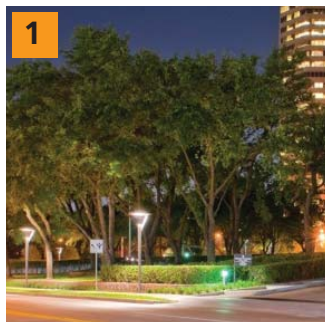


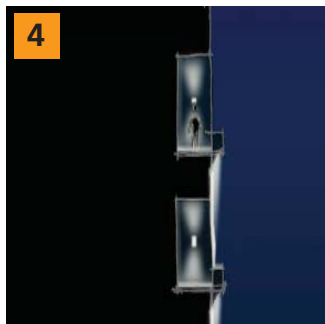
Figure 4.24: Conceptual Lighting Intensity Neighborhood Chart

PHOTO REFERENCE

**SAFETY**  
Street Activity  
Walking



**ARCHITECTURAL**  
Massing  
Details  
Scale  
Fenestration



**SPECIAL**  
Seasonal  
Celebration  
Festival  
Art



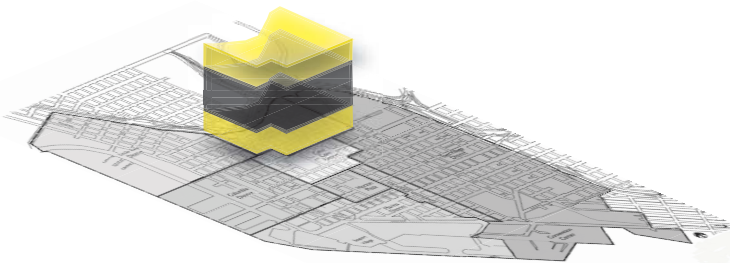
Photo 4.11: Photo Reference Diagram



# 4.6 CORTEZ

Neighborhood Lighting Activity Objectives:

Building Lighting Activity:



Lighting Activity by Neighborhood

**KEY**

- Illumination
- Limited Illumination

Crown

Mid Section

Streetwall

Hardscape

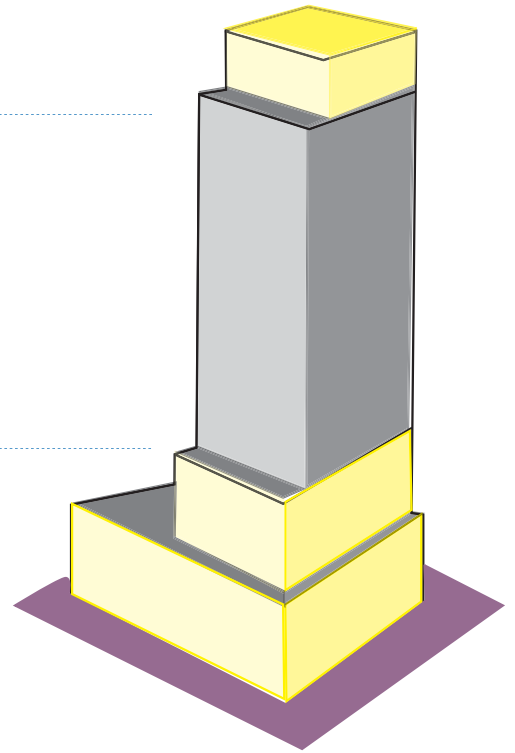


Figure 4.25: Neighborhood Lighting Activity

## CENTRE CITY GREEN - GREEN BUILDING INCENTIVE PROGRAM

The design shall comply with Title 24 for energy and with the City of San Diego curfew requirements. In reference to these codes, the building lighting shall follow the schedule below. To achieve reduced energy consumption, dimming fixtures is encouraged; however, switching lights off is acceptable as an alternative.

WEEKDAY	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	40%	20%
Facade - Mid-Section	40%	20%
Facade - Streetwall	60%	50%
Hardscape	60%	50%

WEEKEND	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	60%	20%
Facade - Mid-Section	60%	20%
Facade - Streetwall	100%	50%
Hardscape	100%	50%

**Notes**

- Add 10% if within 20' of an intersection (Do not exceed 100%).
- If the property is on the Waterfront, an additional 20% of the energy allowance is allowed, but cannot exceed 100%.
- \* Commercial business may be allowed to stay on until business closes.
- See Centre City Green - Green Building Incentive Program for submission requirements.

Table 5: Energy Consumption Schedule

4.6.1 Cortez Lighting Guidelines



Crown Lighting

4.6-1.A Crown lighting intensity should not exceed or compete with the El Cortez sign if located within a four-block radius of the El Cortez building.

4.6-1.B Subdued washes of white light are encouraged at crowns.

**BUG + LUMINANCE**

Luminance Maximum = 10.0 cd/sq.m.  
 All luminaires should comply with BUG B1/ U2/ G1

Mid-Section Lighting

4.6-1.C Lighting should only directly serve residential units. Balcony luminaires should avoid glare to neighboring residential units.

4.6-1.D Mid-section lighting is discouraged on high-rise buildings directly adjacent to the El Cortez. Colored light and changing light patterns are discouraged.

**BUG + LUMINANCE**

Luminance Maximum = 10.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G1.

Streetwall Lighting

4.6-1.E Lighting should be active and engaging at retail locations. Streetwall lighting in residential areas should not be uplighting to neighboring residential units.

4.6-1.F A variety of lantern styles are encouraged at the streetwall. Decorative bracketry will create interest and detail both day and night.

4.6-1.G Lighting should emphasize residential elements, such as stoops and entry ways.

**BUG + LUMINANCE**

Luminance Maximum = 15.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G2

**Hardscape Notes:**

a. Buildings within the designated "Main Street" for the Neighborhood may increase the BUG values by 1 but not exceed 3, or the maximum BUG values allowed by CalGreen.

b. Buildings within the designated "Main Street" for the Neighborhood may increase the Luminance value by 5 cd/m.

Hardscape Lighting

Luminance Maximum = 15.0  
 All luminaires should comply with BUG B1/U2/G2

CORTEZ

Figure 4.26: Section

# 4.7 CIVIC/CORE

## Lighting Goals:

1. Lighting concepts should feature the civic and cultural aspects of this District.
2. Promote the enhanced lighting of government/civic and public buildings. Emphasize cultural amenities such as theaters, concert halls and other performance venues. Lighting of these structures shall be more generous, highlighting the full structure.
3. Develop a lighting plan for the "C" Street the Trolley Line corridor to increase safety levels.
4. Develop a "light art" program for the Civic Center utilizing the "empty" evening spaces. Commission artist(s) to develop and implement a concept.
5. The future redevelopment of Civic Center should include innovative lighting solutions

The Civic/Core District is the government and business/financial center of downtown San Diego. Symphony Hall is home to the San Diego Orchestra and the Civic Center is downtown's most significant theater. Lighting strategies should focus on reinforcing the civic role, while improving civic spaces and the perception of safety in the public realm.

Civic/Core is distinguished from the other neighborhoods with employment uses, resulting in a concentration of tall commercial buildings with generous floorplates and bulk standards. The challenge for this neighborhood is that civic and office buildings are likely to close at mid to late evening resulting in inactive ground floor uses. Lighting strategies should connect the Civic/Core area with its five adjacent other districts/neighborhoods.



Photo 4.12: Images of Civic/Core

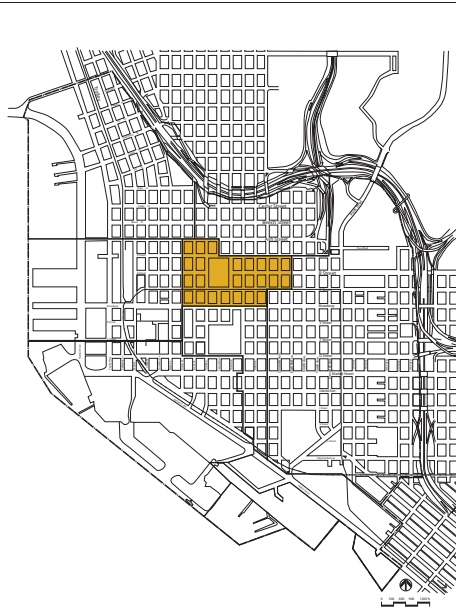
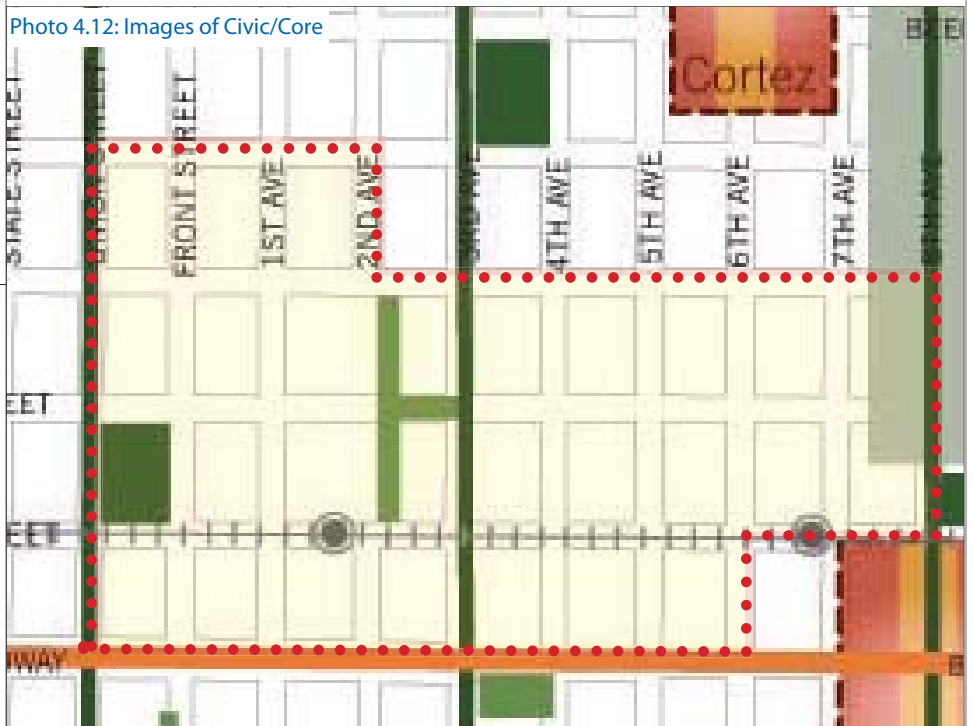


Figure 4.27: Vicinity Map



- |                                 |   |
|---------------------------------|---|
| Gateway Site                    | Existing Public Parks and Open Spaces         |
| Broadway                        | Proposed/Planned Public Parks and Open Spaces |
| Green Street                    | Downtown Green Loop                           |
| Green Street - Pedestrian Only  | Waterfront Promenade                          |
| Neighborhood Center/Main Street | Selected Downtown Landmarks                   |
| Trolley                         |   |

Figure 4.28: Neighborhood Main Streets and Open Space Map

LIGHTING CONCEPTS

Employment and commercial emphasis of the Civic/Core results in greater lighting intensities at tower crowns, defining a backdrop to downtown’s skyline. The future redevelopment of Civic Center provides the opportunity to enhance the public realm while adding to the skyline.

Lighting intensity should be focused along the streetwall [1] for an enhanced walking experience with lobbies that are well lit [2] providing indirect lighting onto the sidewalk.

Examples of Architectural lighting include the Grant Hotel [3] with a programmable LED system that allows for modulation of color. The lighting of only the interior floors, without exterior enhancements, can also provide visual interest [4] with a well-designed building. Architectural lighting can support the branding of corporate office towers by the articulated lighting of its crown [5].

Seasonal lighting of street trees can provide for additional safety and even civic branding [6]. Special lighting is consistent throughout the week and should occur at the tower crown [7,8].

CONCEPT BOX

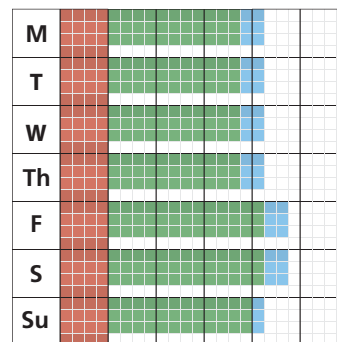
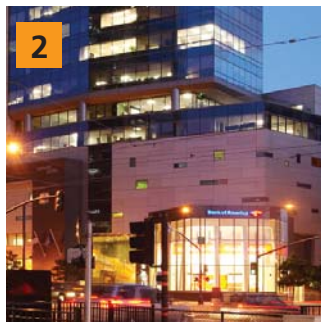
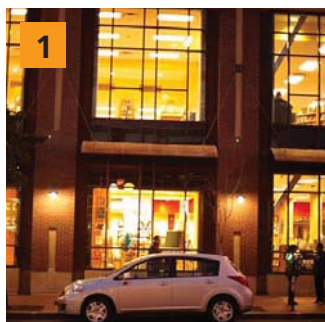



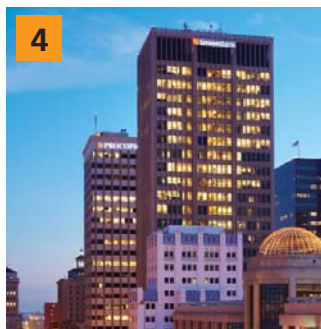
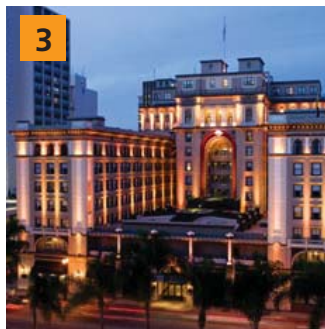
Figure 4.29: Conceptual Lighting Intensity Neighborhood Chart

PHOTO REFERENCE

**SAFETY**  
Street Activity  
Walking

**ARCHITECTURAL**  
Massing  
Details  
Scale  
Fenestration

**SPECIAL**  
Seasonal  
Celebration  
Festival  
Art

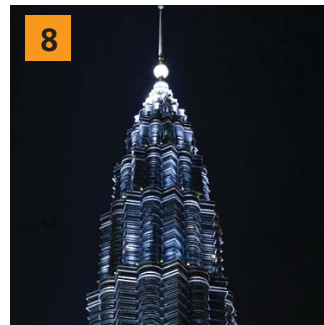
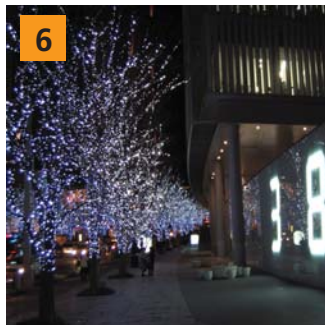
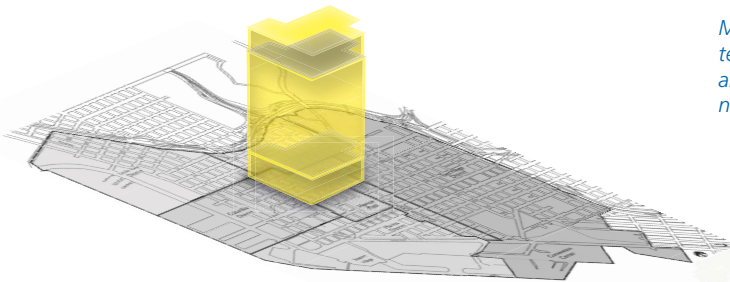



Photo 4.13: Photo Reference Diagram



# 4.7 CIVIC/CORE

## Neighborhood Lighting Activity Objectives:



Lighting Activity by Neighborhood

### KEY

- Illumination
- Limited Illumination

## Building Lighting Activity:

### Crown

*Crown lighting facing Cortez Hill should match the adjacent neighborhood's BUG rating*

### Mid Section

*Mid-section lighting facing Cortez Hill and East Village North areas should match the adjacent neighborhood's BUG ratings*

### Streetwall

### Hardscape

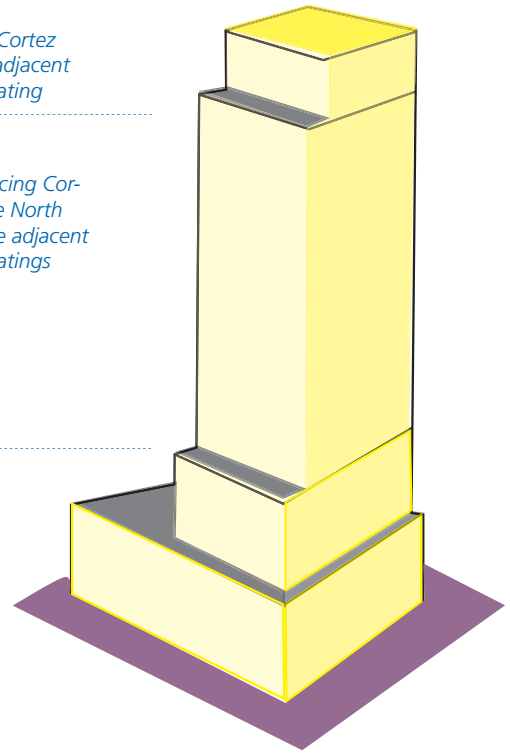


Figure 4.30: Neighborhood Lighting Activity

## CENTRE CITY GREEN - GREEN BUILDING INCENTIVE PROGRAM

The design shall comply with Title 24 for energy and with the City of San Diego curfew requirements. In reference to these codes, the building lighting shall follow the schedule below. To achieve reduced energy consumption, dimming fixtures is encouraged; however, switching lights off is acceptable as an alternative.

WEEKDAY	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	60%	20%
Facade - Mid-Section	60%	20%
Facade - Streetwall	80%	50%
Hardscape	80%	50%

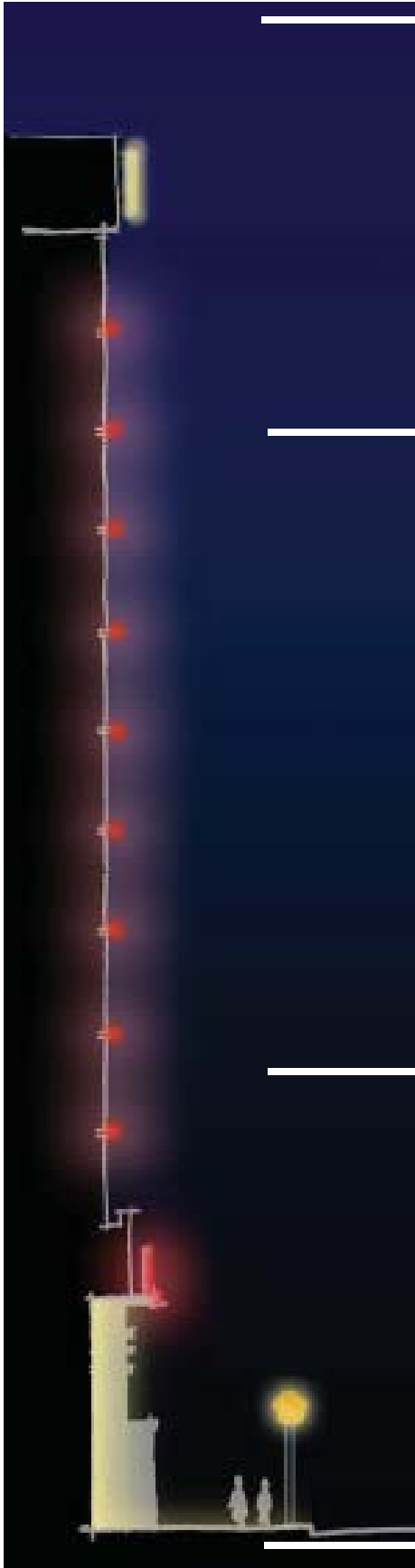
WEEKEND	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	80%	20%
Facade - Mid-Section	80%	20%
Facade - Streetwall	100%	50%
Hardscape	100%	50%

### Notes

- Add 10% if within 20' of an intersection (Do not exceed 100%).
- If the property is on the Waterfront, an additional 20% of the energy allowance is allowed, but cannot exceed 100%.
- \* Commercial business may be allowed to stay on until business closes.
- See Centre City Green - Green Building Incentive Program for submission requirements.

Table 6: Energy Consumption Schedule

4.7.1 Civic/Core Lighting Guidelines



Crown Lighting

4.7-1.A Building crown lighting should highlight the architecture of the building in a way that is unique and identifiable to tenants and users by the use of color modulation and innovative lighting techniques.

BUG + LUMINANCE

Luminance Maximum = 15.0 cd/sq.m.  
All luminaires should comply with BUG B1/ U2/ G2

Mid-Section Lighting

4.7-1.B Mid-section lighting is encouraged, but should be avoided on highly specular surfaces, such as polished granite, reflective glass and metal panels.

4.7-1.C On buildings with glazed exteriors, techniques using interior illumination may be used to add color and visual interest to the crown

4.7-1.D The internal illumination of commercial office floors can provide an effective strategy for exterior lighting.

BUG + LUMINANCE

Luminance Maximum = 15.0 cd/sq.m.  
All luminaires should comply with BUG B1/U2/ G2.

Streetwall Lighting

4.7-1.E Lighting should emphasize lobby locations and primary entries.

4.7-1.F Cultural/art based ground floor tenants, such as galleries and entertainment venues, should be encouraged to create unique lighting expressions along the streetwall.

Hardscape Notes:

a. Buildings located on C Street and Broadway may increase the BUG values by 1 but not exceed 3, or the maximum BUG values allowed by CalGreen.

b. Buildings located on C Street and Broadway may increase the Luminance value by 5 cd/m.

BUG + LUMINANCE

Luminance Maximum = 20.0 cd/sq.m.  
All luminaires should comply with BUG B1/U3/G2

Hardscape Lighting

Luminance Maximum = 20.0  
All luminaires should comply with BUG B1/U3/G2

CIVIC/CORE

Figure 4.31: Section

## 4.8 HORTON PLAZA

### Lighting Goals:

1. A Lighting and Signage Plan should be included as part of the design review process for the renovation of the Horton Plaza Retail Center.
2. The renovation of Horton Plaza should employ dynamic lighting techniques by allowing projection/animation ribbons, screen media systems and modulating color sequences.
3. Innovative and artistic use of lighted signage and graphic elements should be explored with the renovation of Horton Plaza.
4. The redesign of Horton Plaza park and the construction of a new urban plaza should be planned to include more enhanced and potentially interactive lighting.

The Horton Plaza District's predominant uses are business and commercial. A federal building and two older office towers contrast with the historic Spreckels Theater and the brightly colored and energetic Horton Plaza Retail Mall. "When it opened in August 1985, (Horton Plaza) was a risky and radical departure from the standard paradigm of mall design....(Creating) an architectural experience in dramatic contrast to the conventional wisdom of mall management...(and made the mall into an attraction in itself)." Future redevelopment of Horton Plaza should reorient the mall to focus outwards, with buildings and lease spaces that address the surrounding street and Horton Park.

Lighting strategies for the Horton Plaza District should support high activity levels, refining circulation, rejuvenating open spaces, and protecting the Gaslamp Quarter's historic qualities.



Photo 4.14: Images of Horton Plaza

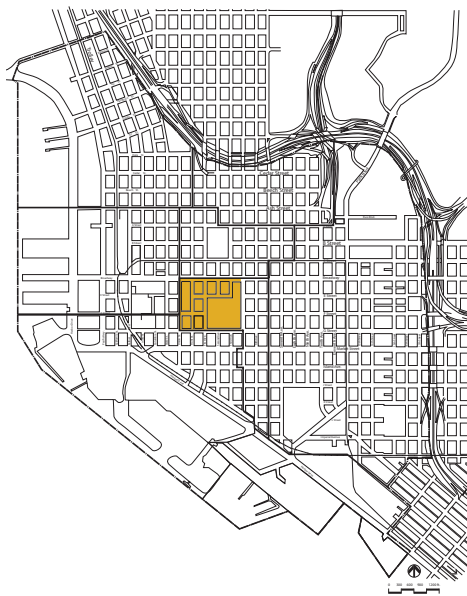


Figure 4.32: Vicinity Map



- Gateway Site
- Broadway
- Green Street
- Green Street - Pedestrian Only
- Neighborhood Center/Main Street
- Trolley
- Existing Public Parks and Open Spaces
- Proposed/Planned Public Parks and Open Spaces
- Downtown Green Loop
- Waterfront Promenade
- Selected Downtown Landmarks

Figure 4.33: Neighborhood Main Streets and Open Space Map

LIGHTING CONCEPTS

Greater lighting levels are required to support commercial, retail and office land uses. The future renovation of Horton Plaza [1] should include outward facing retail tenants to engage the surrounding streets [2]. The expansion of the historic Horton Plaza park with an urban plaza provides many opportunities for enhanced lighting features and specialized lighting and art events [3].

Art should be located within publicly accessible hardscape areas. Lighted

Art and elements should be in appropriate scale to large open areas and backdrop buildings [4].

Special lighting will occur through the week and will intensify during the weekends for events and could include a range of media-based technologies, such as projected lighting [5], LED color modulations [6] and lighted attachments [7] that highlights seasonal or special events.

CONCEPT BOX

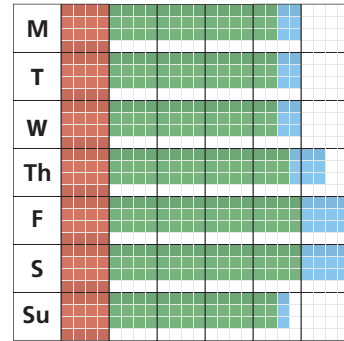
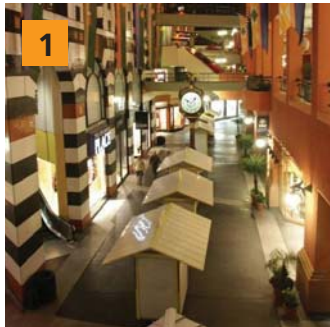


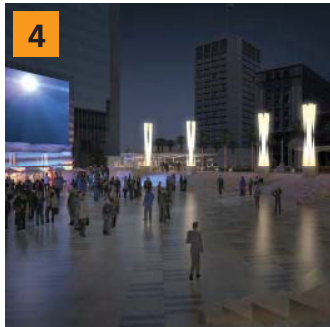
Figure 4.34: Conceptual Lighting Intensity Neighborhood Chart

PHOTO REFERENCE

**SAFETY**  
Street Activity  
Walking



**ARCHITECTURAL**  
Massing  
Details  
Scale  
Fenestration



**SPECIAL**  
Seasonal  
Celebration  
Festival  
Art

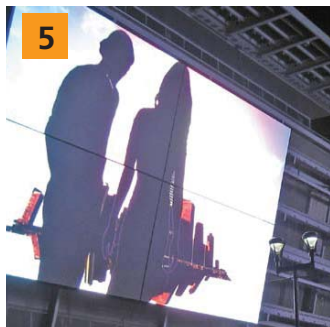


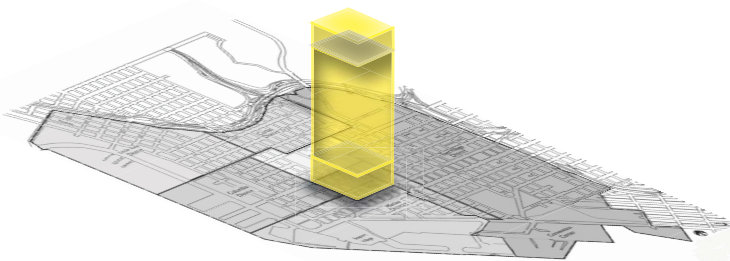
Photo 4.15: Photo Reference Diagram



# 4.8 HORTON PLAZA

Neighborhood Lighting Activity Objectives:

Building Lighting Activity:



Lighting Activity by Neighborhood

**KEY**

- Illumination
- Limited Illumination

Crown

Mid Section

Streetwall

Hardscape

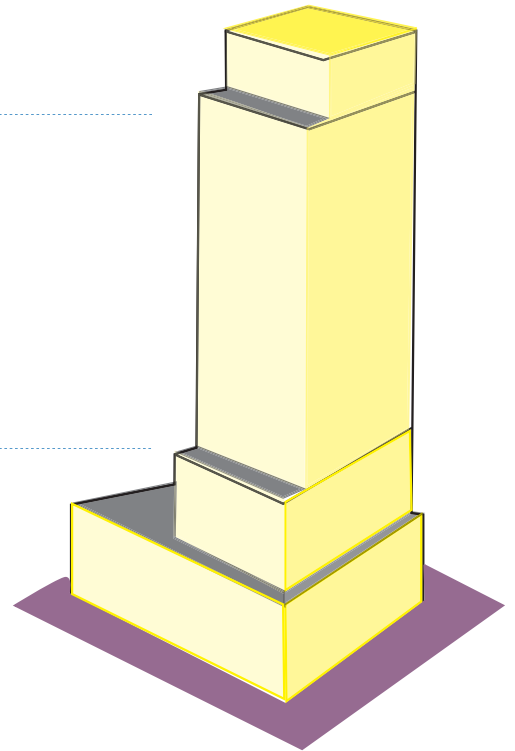


Figure 4.35: Neighborhood Lighting Activity

## CENTRE CITY GREEN - GREEN BUILDING INCENTIVE PROGRAM

The design shall comply with Title 24 for energy and with the City of San Diego curfew requirements. In reference to these codes, the building lighting shall follow the schedule below. To achieve reduced energy consumption, dimming fixtures is encouraged; however, switching lights off is acceptable as an alternative.

WEEKDAY	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	60%	20%
Facade - Mid-Section	60%	20%
Facade - Streetwall	80%	50%
Hardscape	80%	50%

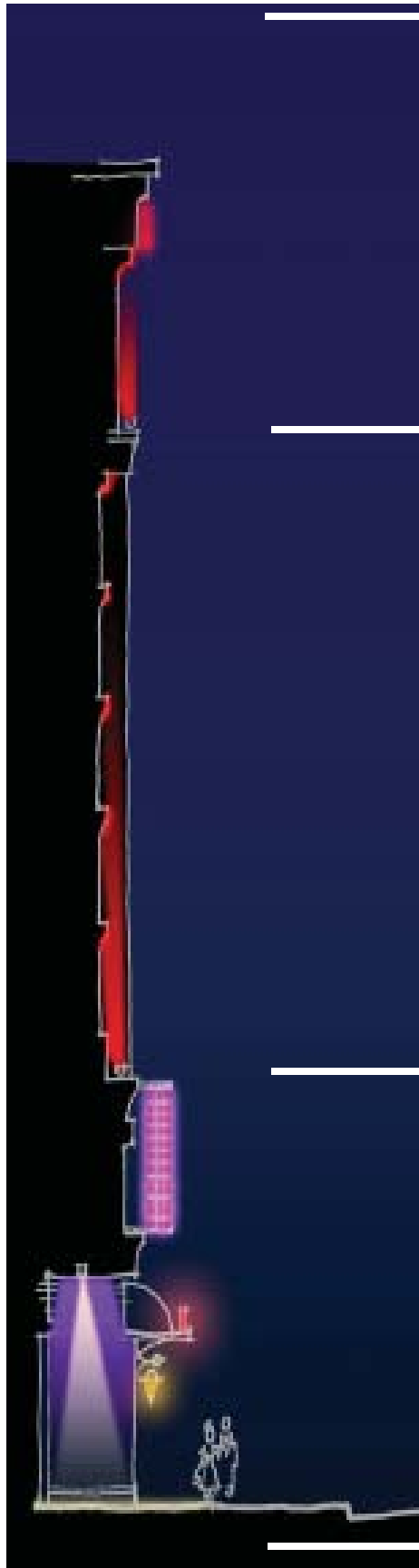
WEEKEND	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	80%	20%
Facade - Mid-Section	80%	20%
Facade - Streetwall	100%	50%
Hardscape	100%	50%

**Notes**

- Add 10% if within 20' of an intersection (Do not exceed 100%).
- If the property is on the Waterfront, an additional 20% of the energy allowance is allowed, but cannot exceed 100%.
- \* Commercial business may be allowed to stay on until business closes.
- See Centre City Green - Green Building Incentive Program for submission requirements.

Table 7: Energy Consumption Schedule

4.8.1 Horton Plaza Lighting Guidelines



Crown Lighting

4.8-1.A Media and dynamic lighting components should be coordinated and programmable for weekday/weekends as well as for special events.

BUG + LUMINANCE

Luminance Maximum = 15.0 cd/sq.m.  
All luminaires should comply with BUG B1/ U2/ G2

Mid-Section Lighting

4.8-1.B The use of color and dramatic highlight is encouraged to enhance architectural and dynamic features of the mid-section.

BUG + LUMINANCE

Luminance Maximum = 15.0 cd/sq.m.  
All luminaires should comply with BUG B1/U2/G2

Streetwall Lighting

4.8-1.C Media/animation layering and color modulation is encouraged.

4.8-1.D Lighting should emphasize the entries and assist in wayfinding at the ground level.

4.8-1.E Lighting should be integrated into storefront design.

**Hardscape Notes:**

a. Buildings located on Broadway, Horton Plaza urban plaza and Fourth Avenue may increase the BUG values by 1 but not exceed 3, or the maximum BUG values allowed by CalGreen.

b. Buildings located on Broadway, Horton Plaza urban plaza and Fourth Avenue may increase the Luminance value by 5 cd/m.

BUG + LUMINANCE

Luminance Maximum = 20.0 cd/sq.m.  
All luminaires should comply with B.U.G.B1/U3/ G2

Hardscape Lighting

Luminance Maximum = 20.0  
All luminaires should comply with BUG B1/U3/G2

HORTON PLAZA

Figure 4.37: Section

# 4.9 GASLAMP QUARTER

## Lighting Goals:

1. All lighting strategies in Gaslamp Quarter should maintain continuity in light intensity, enhancing the district's fine grain detail and status as a entertainment and shopping district.
2. Individual businesses should make high quality lighting a priority in both interior and exterior treatments, with layering of effects that would allow weekday/ weekend variation.
3. All lighting and commissioned art should comport to the standards set by Secretary of Interior Standards.
4. Historic signs should be internally or externally lighted.
5. The selective addition of lighting projections on blank wall facades as part of weekend, festivals, holidays, and special celebrations should be considered. Content of lighted projects should be event specific.
6. Coordinated control systems along 5th Avenue should support synchronized lighting "shows" for festivals, holidays, and special occasions.
7. A new or existing non-profit or arts commissions group should build upon the holiday tree lighting program and Mardi Gras Celebration with the management of additional seasonal lighted art events and projections throughout the Gaslamp Quarter.

The Gaslamp Quarter has a successful and recognizable nighttime image that is supported by its historic buildings, which provide a fine-grained, pedestrian-scaled environment that recalls the district's colorful past. The district populated with restaurants, entertainment venues and retail outlets, galleries and hotels which has established the Gaslamp Quarter as a 24/7 district. Within the last decade, complementary forms of mixed-use residential development have emerged around the perimeter of the district.

The Gaslamp Quarter's lighting identity is anchored by its five globe iconic "gaslamp" luminaries creating its instantly recognizable signature. Business and property owners have added exterior lighting to many buildings elements. Lighting treatments should continue to support high activity levels, refining circulation, rejuvenating open spaces, and emphasizing the Gaslamp Quarter's historic inventory of buildings.

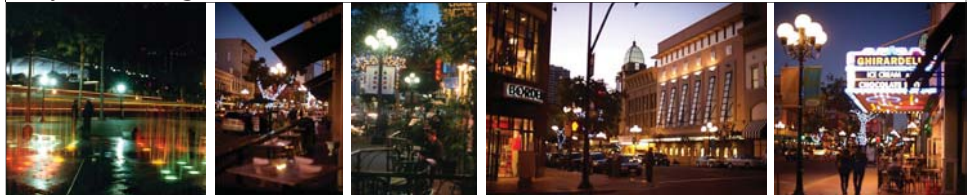


Photo 4.16: Images of the Gaslamp Quarter

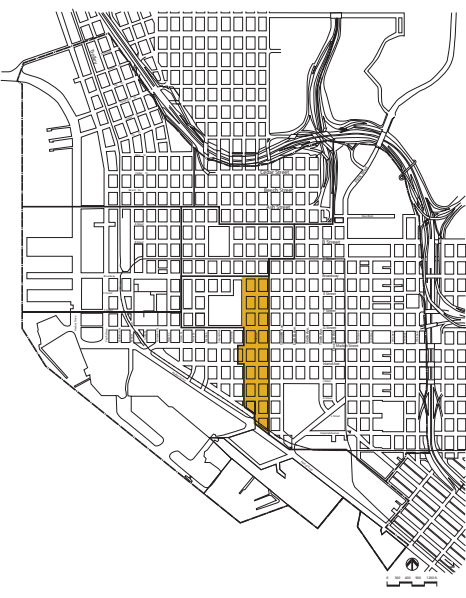


Figure 4.38: Vicinity Map

Figure 4.39: Neighborhood Main Streets and Open Space Map

LIGHTING CONCEPTS

CONCEPT BOX

Greater light intensity is encouraged in the Gaslamp Quarter to support the nighttime activity of its predominately commercial and entertainment uses. [1]

Exterior lighting along the streetwall should be designed in a way to allow for some light to support sidewalk activity and outdoor dining. [2,3]

Architectural lighting treatments should articulate the elements of the district's historic buildings, without altering the building's detailing [4-5]. New buildings should be lighted to emphasize the fine aspects of its design, such as entries, columns awnings, etc. [6]

Special lighting should occur throughout the week with greater intensity during the weekends to support seasonal or special events and festivals. Lighting treatments could include LED color modulations to support seasonal events and projected public light art. [7-8]

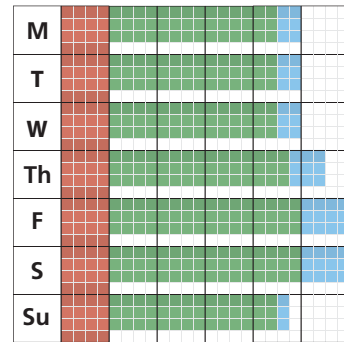


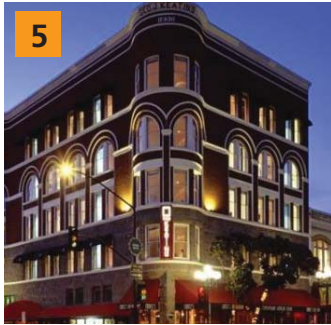
Figure 4.40: Conceptual Lighting Intensity Neighborhood Chart

PHOTO REFERENCE

**SAFETY**  
Street Activity  
Walking



**ARCHITECTURAL**  
Massing  
Details  
Scale  
Fenestration



**SPECIAL**  
Seasonal  
Celebration  
Festival  
Art



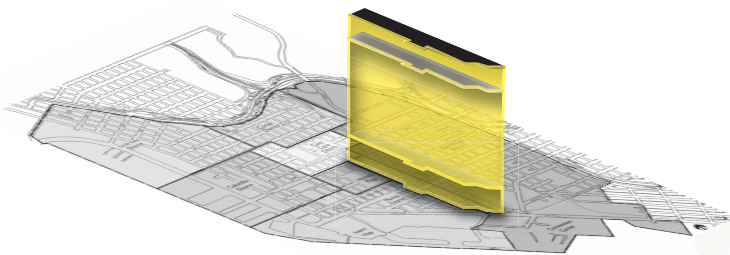
Photo 4.17: Photo Reference Diagram



# 4.8 GASLAMP QUARTER

## Neighborhood Lighting Activity Objectives:

## Building Lighting Activity:



Lighting Activity by Neighborhood

### KEY

- Illumination
- Limited Illumination

Crown

Mid Section

Streetwall

Hardscape

*See Gaslamp PDO:*

*60' Base Height  
60'-75' North of Island Avenue  
75' to a maximum of 125' South  
of Island Avenue requires*

*City Council approval*

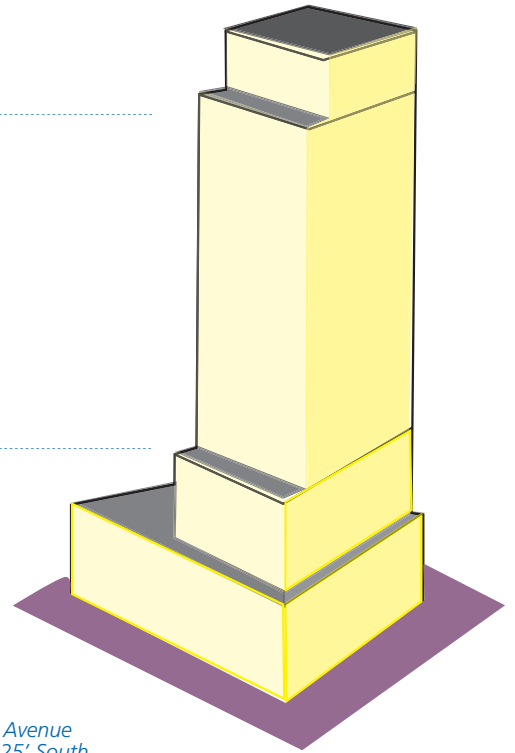


Figure 4.41: Neighborhood Lighting Activity

## CENTRE CITY GREEN - GREEN BUILDING INCENTIVE PROGRAM

The design shall comply with Title 24 for energy and with the City of San Diego curfew requirements. In reference to these codes, the building lighting shall follow the schedule below. To achieve reduced energy consumption, dimming fixtures is encouraged; however, switching lights off is acceptable as an alternative.

WEEKDAY	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	60%	20%
Facade - Mid-Section	60%	20%
Facade - Streetwall	80%	50%
Hardscape	80%	50%

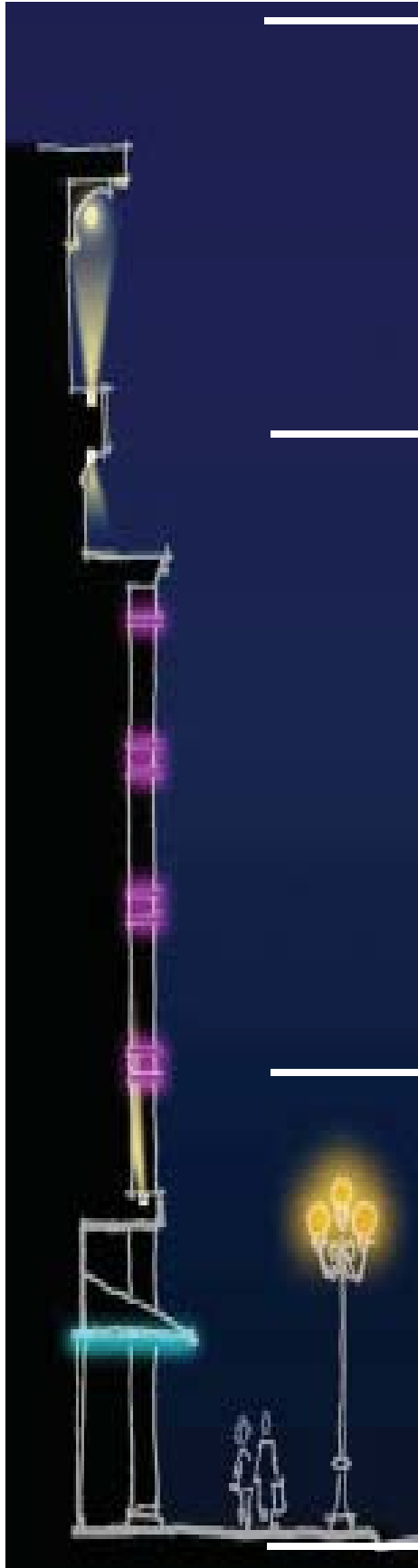
WEEKEND	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	80%	20%
Facade - Mid-Section	80%	20%
Facade - Streetwall	100%	50%
Hardscape	100%	50%

### Notes

- Add 10% if within 20' of an intersection (Do not exceed 100%).
- If the property is on the Waterfront, an additional 20% of the energy allowance is allowed, but cannot exceed 100%.
- \* Commercial business may be allowed to stay on until business closes.
- See Centre City Green - Green Building Incentive Program for submission requirements.

Table 8: Energy Consumption Schedule

4.9.1 Gaslamp Lighting Guidelines



Crown Lighting

4.9-1.A Lighting strategies should enhance the historic architectural features and contribute to the district's overall character.

4.9-1.B Shielding for uplighting is encouraged.

**BUG + LUMINANCE**  
 Luminance Maximum = 15.0 cd/sq.m.  
 All luminaires should comply with BUG B1/ U2/ G2

Mid-Section Lighting

4.9-1.C Layered lighting effects that use multiple lighting techniques and applications are encouraged to allow for week-day/weekend lighting variations.

4.9-1.D All lighting strategies for historic designated buildings should enhance architectural historic qualities, such as the composition, unique features and key elements.

**BUG + LUMINANCE**  
 Luminance Maximum = 15.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G2

Streetwall Lighting

4.9-1.E Greater lighting intensities that support commercial and entertainment venues are encouraged. Examples may include greater emphasis of architectural elements, entries and storefront design.

4.9-1.F Lighting should emphasize the storefronts and entries along the streetwall.

**Hardscape Notes:**  
 a. Buildings located on 5th Avenue may increase the BUG values by 1 but not exceed 3, or the maximum BUG values allowed by CalGreen.

b. Buildings located on 5th Avenue may increase the Luminance value by 5 cd/m.

**BUG + LUMINANCE**  
 Luminance Maximum = 20.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U3/G2  
 Target luminance average: 15 cd/sq.m.

Hardscape Lighting

Luminance Maximum = 20.0

All luminaires should comply with BUG B1/U3/G2

Figure 4.42: Section

## 4.10 EAST VILLAGE-NORTH OF MARKET

### Lighting Goals:

1. Inclusion of light art pieces as part of new development projects is encouraged.
2. Implement a lighting plan for "green" streets with an emphasis on accenting street landscaping, including a unique lighting identity for the "Park to Bay" that connects with Balboa Park.
3. The design of East Village Green should include a lighting plan that enhances nighttime use and safety.

The northern part of East Village is defined by a concentration of local and regional educational facilities that includes San Diego High School, San Diego City College and the New School of Architecture & Design. Given the large areas of under-developed land remains in the neighborhood, the East Village will experience the greatest amount of development as downtown builds-out.

The DCP identifies two Neighborhood Centers and Green Streets that seek to connect City College with downtown. East Village Green will be downtown's largest park and seismic faults form a series of pocket parks that could become amenities to current and future residents. Lighting strategies should focus on improving the perception of safety in the public realm including along the Park-to-Bay link, along the proposed Green Streets, in future parks, and along the perimeter around the City College.



Photo 4.18: Images of East Village

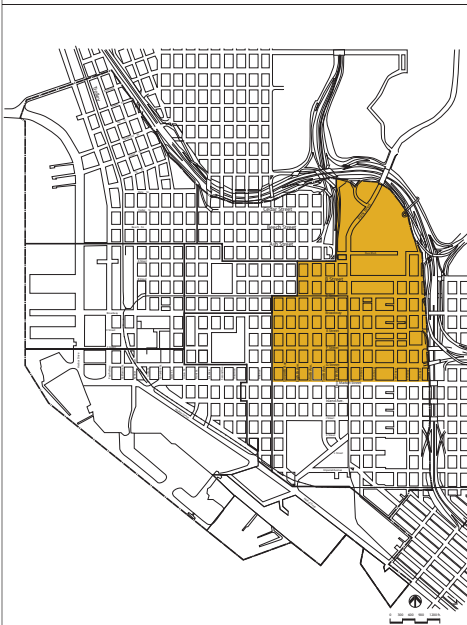


Figure 4.43: Vicinity Map

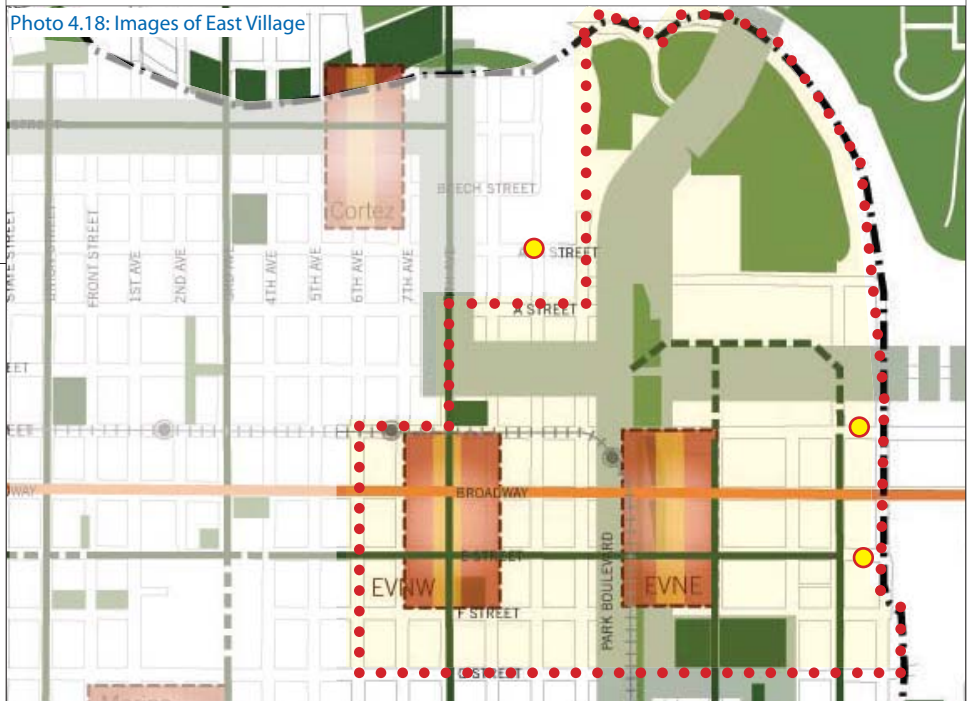


Figure 4.44: Neighborhood Main Streets and Open Space Map

LIGHTING CONCEPTS

CONCEPT BOX

The area of East Village, north of Market Street, will experience the greatest amount of redevelopment as under-utilized parcels of land are transformed. The proposed 4.1 acre East Village Green Park could be a catalyst to future development north of Market Street with mixed-use residential development anchored by proposed green streets and pocket parks. Lighting strategies should provide for safe walking experience into and around these future open space amenities [1]. East Village

Green park, as well as the pocket parks and proposed green streets provide opportunities for lighted art and additional lighting to provide for safe circulation. [2]

Greater architectural lighting intensity should emphasize the streetwall and crown while minimizing glare onto adjacent residential development. [3,4]

Special lighting can occur within these parks for weekend, seasonal or holiday neighborhood events, and could include lighted trees and a lighted median along Market Street with color modulations for seasonal events. [5,6]

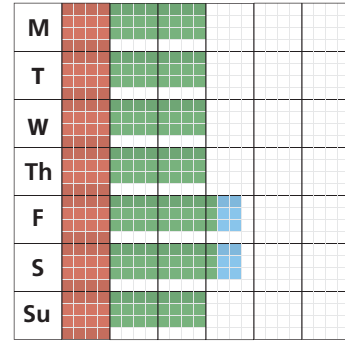
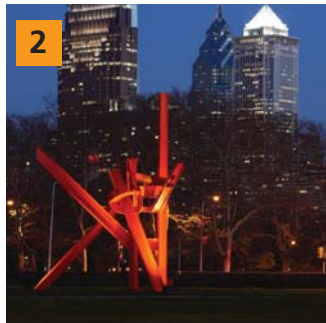
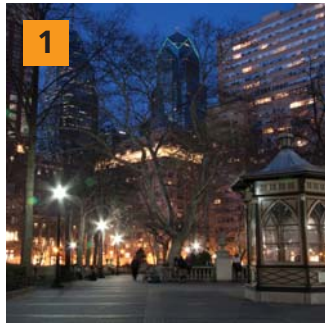



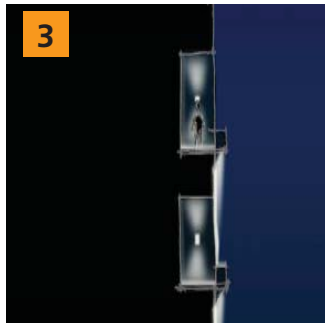
Figure 4.45: Conceptual Lighting Intensity Neighborhood Chart

PHOTO REFERENCE

**SAFETY**  
Street Activity  
Walking

**ARCHITECTURAL**  
Massing  
Details  
Scale  
Fenestration

**SPECIAL**  
Seasonal  
Celebration  
Festival  
Art

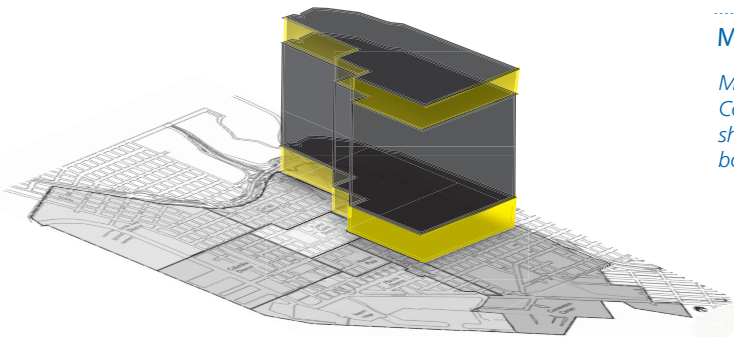



Photo 4.19: Photo Reference Diagram



# 4.10 EAST VILLAGE – NORTH OF MARKET

## Neighborhood Lighting Activity Objectives:



Lighting Activity by Neighborhood

**KEY**

- Illumination
- Limited Illumination

### Building Lighting Activity:

**Crown**

*Crown lighting facing Civic/Core and Gaslamp areas should match the adjacent neighborhood's BUG rating*

**Mid Section**

*Mid-section lighting facing Civic/Core and Gaslamp Quarter areas should match the adjacent neighborhood's BUG rating*

**Streetwall**

**Hardscape**

*Building streetwall lighting facing Civic/Core and Gaslamp Quarter areas should match the adjacent neighborhood's BUG rating*

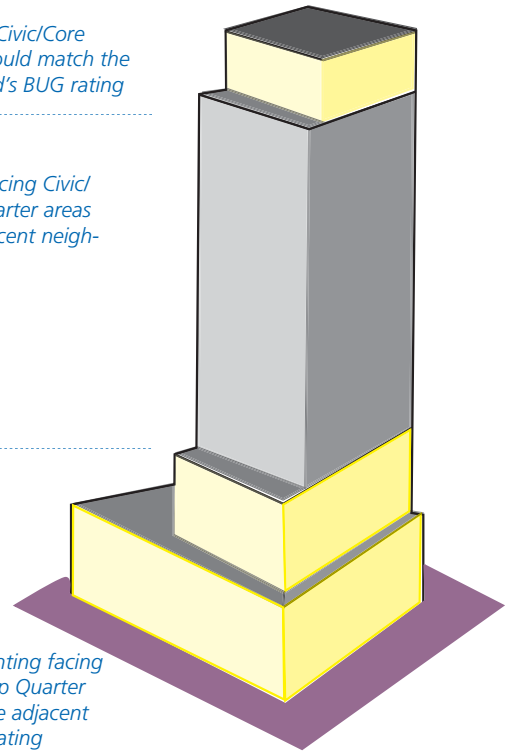


Figure 4.46: Neighborhood Lighting Activity

## CENTRE CITY GREEN – GREEN BUILDING INCENTIVE PROGRAM

The design shall comply with Title 24 for energy and with the City of San Diego curfew requirements. In reference to these codes, the building lighting shall follow the schedule below. To achieve reduced energy consumption, dimming fixtures is encouraged; however, switching lights off is acceptable as an alternative.

WEEKDAY	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	40%	20%
Facade - Mid-Section	40%	20%
Facade - Streetwall	60%	50%
Hardscape	60%	50%

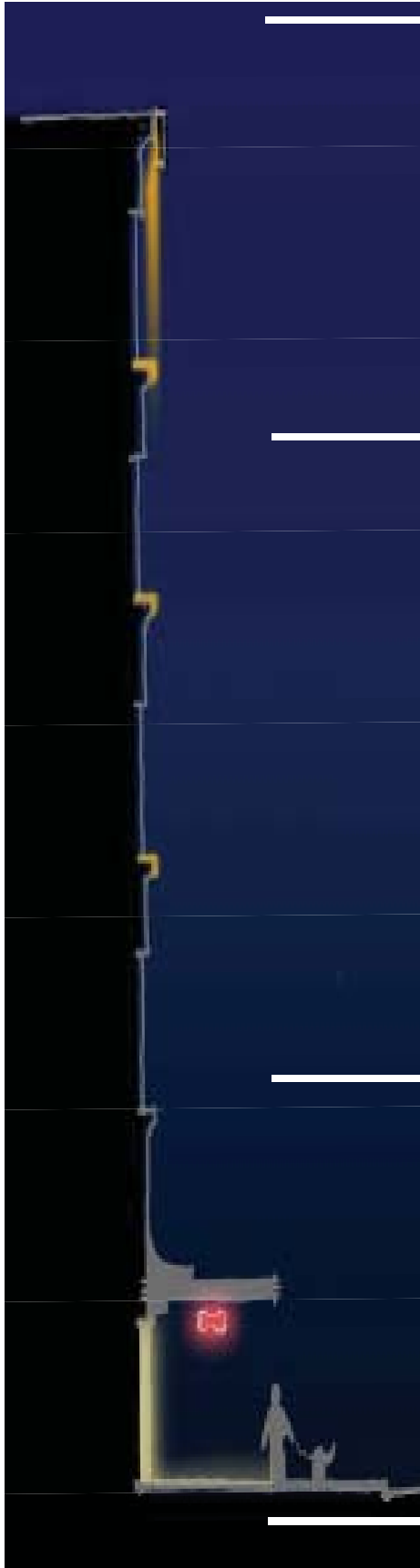
WEEKEND	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	60%	20%
Facade - Mid-Section	60%	20%
Facade - Streetwall	100%	50%
Hardscape	100%	50%

**Notes**

- Add 10% if within 20' of an intersection (Do not exceed 100%).
- If the property is on the Waterfront, an additional 20% of the energy allowance is allowed, but cannot exceed 100%.
- \* Commercial business may be allowed to stay on until business closes.
- See Centre City Green - Green Building Incentive Program for submission requirements.

Table 9: Energy Consumption Schedule

4.10.1 East Village Lighting Guidelines



Crown Lighting

4.10-1A The wash of colored light can connect the crown and streetwall and create interest to a converted warehouse or loft building.

4.10-1.B Lighting strategies should enhance architectural features and contribute to the district's overall character.

**BUG + LUMINANCE**

Luminance Maximum = 10.0 cd/sq.m.  
 All luminaires should comply with BUG B1/ U2/ G1

Mid-Section Lighting

4.10-1.C Lighting should only serve a purpose to residential functions. Balcony luminaires should avoid glare to neighboring residential units.

4.10-1.D Mid-section lighting is discouraged on high-rise buildings directly adjacent to the residential developments. Colored light and dynamic light patterns are discouraged.

**BUG + LUMINANCE**

Luminance Maximum = 10.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G1

Streetwall Lighting

4.10-1.C Color schemes that differentiate the East Village north/south areas versus east/west areas or night light proximity to an educational facility may add orientation to night time wayfinding.

4.10-1.D Illumination should promote active pedestrian activities along the streets.

**Hardscape Notes:**

a. Buildings within the designated "Main Street" for the Neighborhood may increase the BUG values by 1 but not exceed 3, or the maximum BUG values allowed by CalGreen.

b. Buildings within the designated "Main Street" for the Neighborhood may increase the Luminance value by 5 cd/m.

**BUG + LUMINANCE**

Luminance Maximum = 15.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G2

Hardscape Lighting

Luminance Maximum = 15.0  
 All luminaires should comply with BUG B1/U2/G2

Figure 4.47: Section

## 4.11 EAST VILLAGE-SOUTH OF MARKET

### Lighting Goals:

1. Lighting strategies are encouraged to reinforce the baseball season. Possibilities include multicolored lighting markers integrated into new street-lights that react to major traffic ingress and egress, which could also celebrate home-runs, team wins, etc.
2. Lighting strategies for new developments should incorporate, where appropriate, lighted art pieces. Light art should connect to and engage the pedestrian.

PETCO Park has caused the growth of a vibrant residential, office, and entertainment district south of Market Street and west of Park Boulevard; also complementing the Gaslamp Quarter to the west and the Convention Center to the south. Catalyzed by this success, new mixed-use high-rise developments have grown along Market Street and around the Ballpark, making this area of East Village one of the most dynamic redevelopment areas of downtown.

This infusion of activity affords lighting to have a greater impact both in the design of buildings and in the enhancement of the public realm, supporting high activity and implementing energy efficient street and pedestrian fixtures.



Photo 4.20: Images of East Village

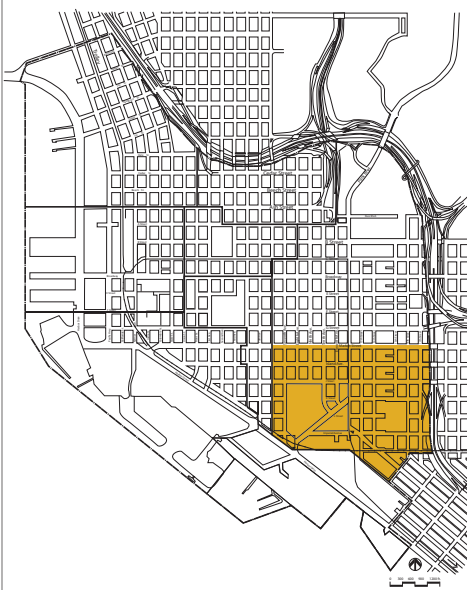


Figure 4.48: Vicinity Map

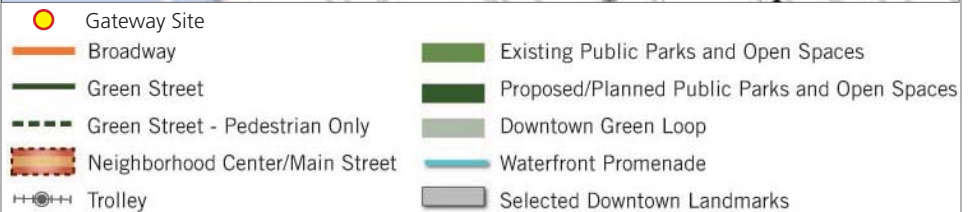
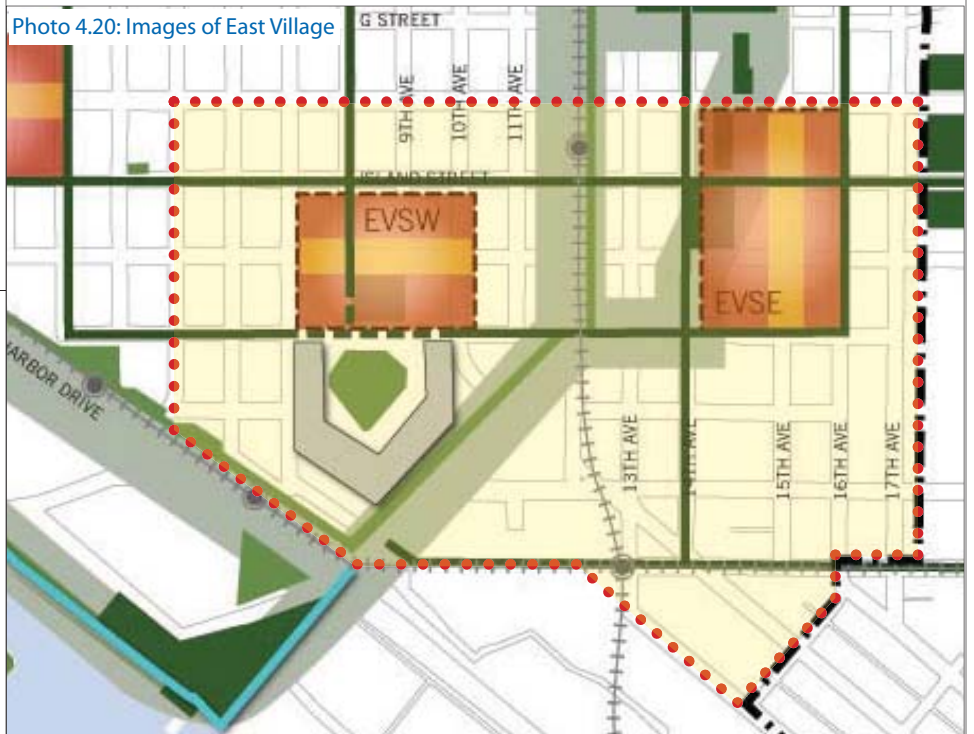


Figure 4.49: Neighborhood Main Streets and Open Space Map

LIGHTING CONCEPTS

CONCEPT BOX

Lighting strategies should provide for a safe walking experience along the streetwall that could include lighted trees, greater transparency at the base of buildings with either exterior mounted light fixtures or festoon lighting attachments. [1-3]

Architectural lighting intensity will also be greater for buildings that directly face the park, with emphasis on the lighting of architecture as backdrops to the ballpark experience. The potential of color modulation during

special events is appropriate. For developments adjacent to residential development, mid-section lighting is discouraged. [4,5]

Special lighting can be more dynamic with color modulations and lighted projects for weekend, seasonal or holiday neighborhood and events [6,7]. Media arts is another component that can be integrated into the streetwall that can be coordinated with special events. [8]

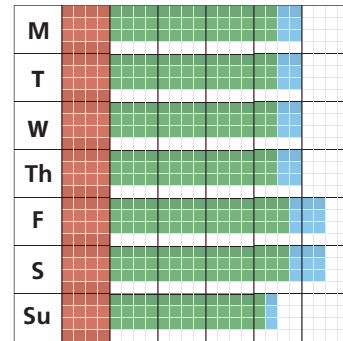
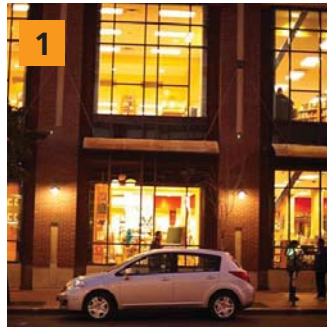



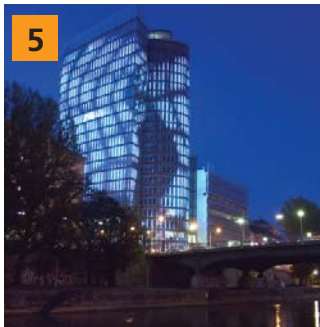
Figure 4.50: Conceptual Lighting Intensity Neighborhood Chart

PHOTO REFERENCE

**SAFETY**  
Street Activity  
Walking

**ARCHITECTURAL**  
Massing  
Details  
Scale  
Fenestration

**SPECIAL**  
Seasonal  
Celebration  
Festival  
Art

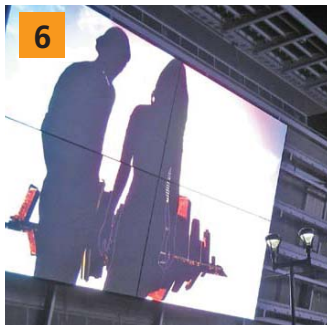



Photo 4.21: Photo Reference Diagram



# 4.11 EAST VILLAGE – SOUTH OF MARKET

Neighborhood Lighting Activity Objectives:

Building Lighting Activity:

Crown

Mid Section

Mid-section lighting is appropriate adjacent to PETCO Park

Streetwall

Hardscape

Lighting Activity by Neighborhood

**KEY**

- Illumination
- Limited Illumination

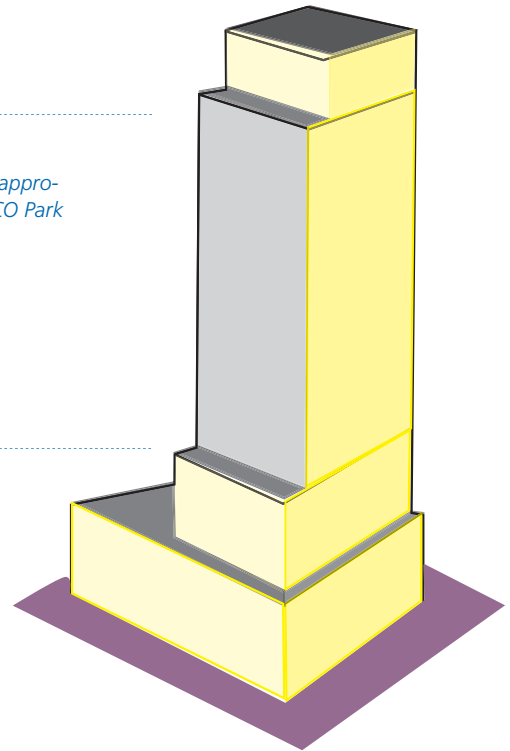


Figure 4.51: Neighborhood Lighting Activity

## CENTRE CITY GREEN – GREEN BUILDING INCENTIVE PROGRAM

The design shall comply with Title 24 for energy and with the City of San Diego curfew requirements. In reference to these codes, the building lighting shall follow the schedule below. To achieve reduced energy consumption, dimming fixtures is encouraged; however, switching lights off is acceptable as an alternative.

WEEKDAY	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	60%	20%
Facade - Mid-Section	40%	20%
Facade - Streetwall	80%	50%
Hardscape	80%	50%

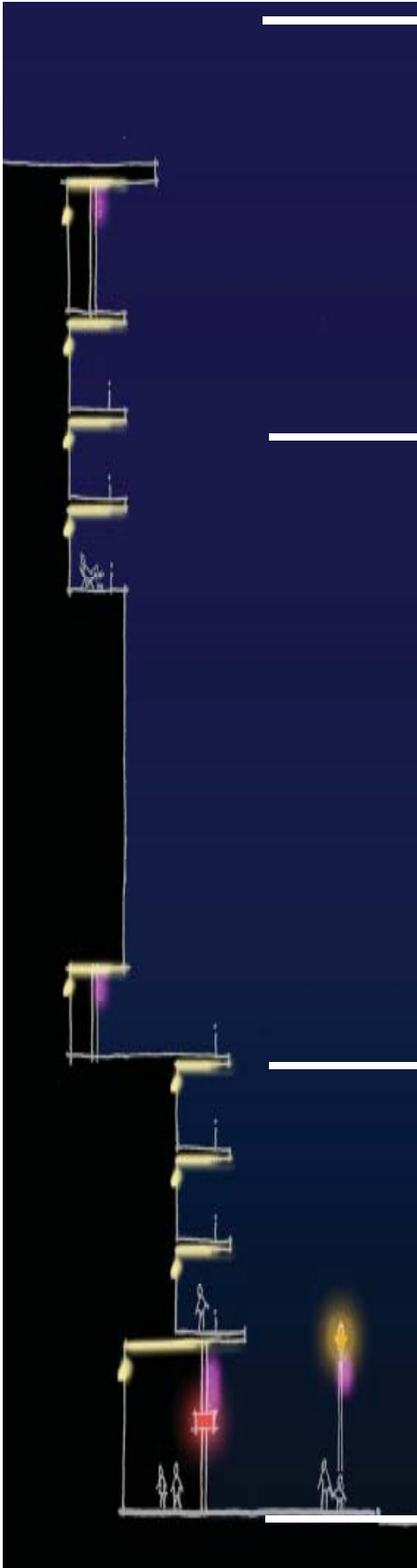
WEEKEND	Energy Consumption Allowance (as a % of Title-24)	
	Sunset - 11 pm*	11pm - Sunrise
Facade - Crown	80%	20%
Facade - Mid-Section	80%	20%
Facade - Streetwall	100%	50%
Hardscape	100%	50%

**Notes**

- Add 10% if within 20' of an intersection (Do not exceed 100%).
- If the property is on the Waterfront, an additional 20% of the energy allowance is allowed, but cannot exceed 100%.
- \* Commercial business may be allowed to stay on until business closes.
- See Centre City Green - Green Building Incentive Program for submission requirements.

Table 10: Energy Consumption Schedule

4.11.1 East Village Lighting Guidelines



Crown Lighting

4.11-1.A Washes of colored light can connect the crown and streetwall and bring interest to a converted warehouse or loft building.

4.11-1.B Lighting strategies should emphasize the architectural features that are germane to the district's character, such as masonry details and other materials with natural finishes.

**BUG + LUMINANCE**  
 Luminance Maximum = 15.0 cd/sq.m.  
 All luminaires should comply with BUG B1/ U2/ G2

Mid-Section Lighting

4.11-1.C Lighting approaches should minimize glare to adjacent residential units. Lighting at balconies should be directed towards the building.

4.11-1.D Lighting at the mid-section is appropriate only for buildings that face PETCO Park.

**BUG + LUMINANCE**  
 Luminance Maximum = 10.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U2/G1

Streetwall Lighting

4.11-1.E Unique lighting at entry points and retail venues is encouraged.

4.11-1.F Dynamic LED lighting and media art should be considered at streetwall around the ballpark.

**Hardscape Notes:**  
 a. Buildings within the designated "Main Street" for the Neighborhood may increase the BUG values by 1 but not exceed 3, or the maximum BUG values allowed by CalGreen.  
 b. Buildings within the designated "Main Street" for the Neighborhood may increase the Luminance value by 5 cd/m.

**BUG + LUMINANCE**  
 Luminance Maximum = 20.0 cd/sq.m.  
 All luminaires should comply with BUG B1/U3/G2

Hardscape Lighting

Luminance Maximum = 20.0  
 All luminaires should comply with BUG B1/U3/G2

Figure 4.52: Section

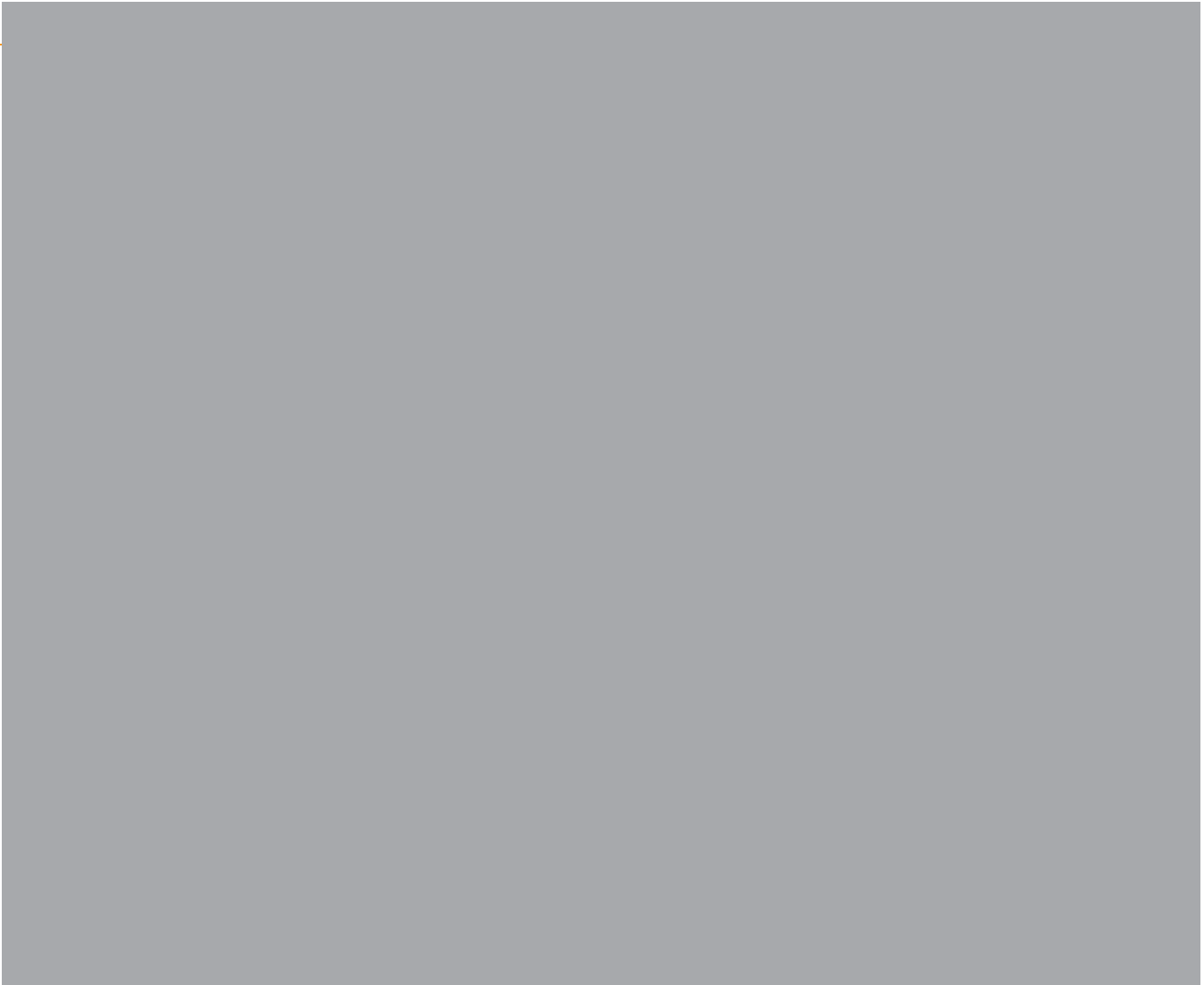
**SAN DIEGO DOWNTOWN LIGHTING PLAN**

# ENERGY REBATES AND PROGRAMS

# 5

5.0	Introduction	5-2
5.1	SDG&E® Programs	5-2
5.2	SDG&E Emerging Technologies Program	5-4
5.3	Energy Consumption Allowances Incentive	5-7





## 5.0 INTRODUCTION

Many local, state and federal incentive programs exist to encourage building owners and developers to use state-of-the-art and cost-effective lighting technologies. These programs are designed to incentivize the use of new technologies that offer better performance, lower energy use, longer life and lower maintenance requirements to help building owners realize energy and cost savings over time.

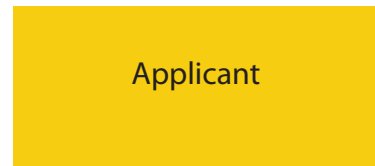
As part of downtown’s sustainability program, Centre City Green, CCDC, offers development incentives such as floor area ratio (FAR) bonuses to reward reductions in energy consumption using Title 24’s baseline allowances for exterior lighting as the benchmark. The process to achieve development incentives is outlined in detail in the Centre City Green Submittal Manual, which is available through CCDC and online at [ccdc.com](http://ccdc.com).

Other energy efficiency incentives can be found through energy utilities like San Diego Gas & Electric® (SDG&E) and regional non-profit organizations such as the California Center for Sustainable Energy and the U.S. Green Building Council, San Diego chapter.

## 5.1 SDG&E PROGRAMS

SDG&E partnered with CCDC in the development of this plan and offers a variety of incentive programs for commercial and residential projects. In many cases, the references “in the Appendix” are links to program documents that are maintained and updated on a regular basis. The Lighting Plan encourages designers and building owners to access these programs and explore all possibilities to advance the quality and energy efficiency of exterior lighting. The specific web links are provided in the Appendix under Utility References, though they are subject to change.

The following section describes SDG&E programs as well as the Emerging Technologies Program for new and existing construction.



*Three Programs - options that can be pursued to achieve Energy Efficiency Incentives for new or existing buildings*

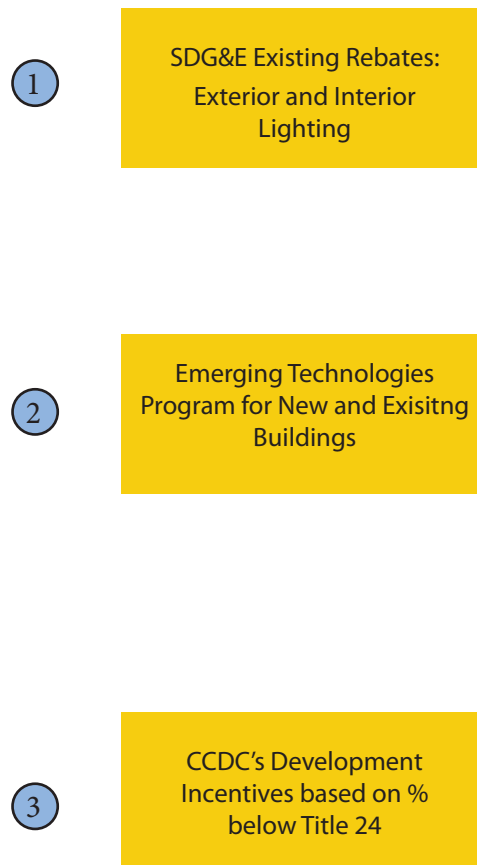


Figure 5.1: Incentive Program Options

### 5.1-1 SDG&E Programs

The following is a snapshot of some of the current resources and incentives available from SDG&E.

#### 5.1-1.A Savings by Design Program

Savings by Design is designed for new projects and is based on the State of California Energy Code, Title 24. Although not specifically designed for exterior lighting, the overall energy effectiveness of the project provides design assistance to the owner to purchase better equipment and to the design team to design more energy efficient systems. At the time of adoption of the Lighting Plan, energy savings trade-offs from exterior to interior are not allowed. This may change in the future.

Design assistance is available to the design team that may consist of consultation on enhanced design strategies and/or a recommendation report to the owner for design modifications.

#### 5.1-1.B California Advanced Homes Program

This program is for new residential construction. It currently does not offer incentives for lighting but should be checked periodically for updates that may add lighting incentives.

#### 5.1-1.C Energy Savings Bid

Energy Savings Bid offers incentives for non-residential energy-saving retrofit projects. Projects may include a single customer or an aggregate of multiple sites. All projects require measurement and verification upon completion.

#### 5.1-1.D Energy Efficiency Business Rebates

Energy Efficiency Business Rebates offers rebates to eligible business customers for installing energy-efficient lighting, refrigeration, foodservice, natural gas and other technologies. Installing energy-efficient equipment in a business can help reduce energy consumption and operating expenses, which leads to greater profitability, productivity and efficiency. Rebates are designed to encourage such installations by helping to offset the cost of installing energy efficient equipment. For more information, visit [sdge.com/business](http://sdge.com/business).

#### 5.1-1.E Energy Efficiency Business Incentive Program

Energy Efficiency Business Incentives offers incentive payments for energy-efficiency projects involving the installation of new, high-efficiency equipment or systems. A project may consist of the retrofit of existing equipment/systems or the installation of equipment associated with new/added load.

Estimation software or engineering calculations are used to estimate the energy savings and incentive depending on the type of energy-efficiency measure installed. Some projects may require a measured savings approach. Incentives are paid based on the quantity of kilowatt-hours (kWh) or therms saved resulting from the installation of the new equipment or system.

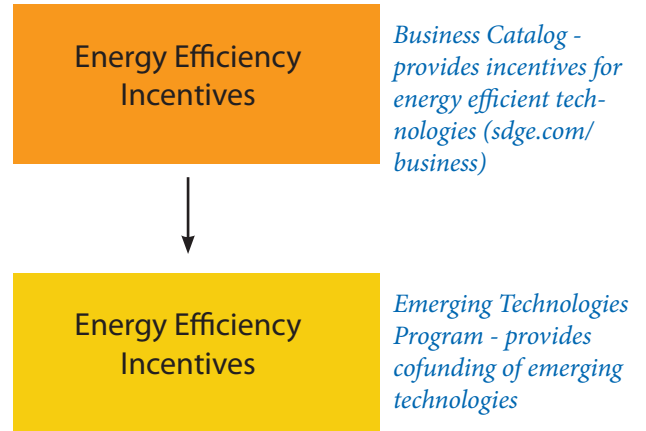
## 5.2 EMERGING TECHNOLOGIES PROGRAM

The Emerging Technologies Program is designed to foster installation of new products, concepts and technologies into new projects or retrofitting of existing projects. Each technology application must be evaluated by the SDG&E Emerging Technologies Group.

The technology applications are used for assessment, demonstration or to showcase the new technology. Because it is a public program, the owner of the building must allow access to people who are interested in learning about the technology. For new construction, Emerging Technologies may help with the incremental cost of leading edge products, but only after the incentives from the Savings by Design program are applied to the project. For retrofit of existing buildings, Emerging Technologies may provide some co-funding for products that are new and not listed on the Energy Efficiency Business Rebates program described above.

The Lighting Master Plan encourages owners and designers to contract SDG&E to take advantage of this program. Refer to Technology Development/Emerging Technologies program.

### RETROFIT



### NEW CONSTRUCTION

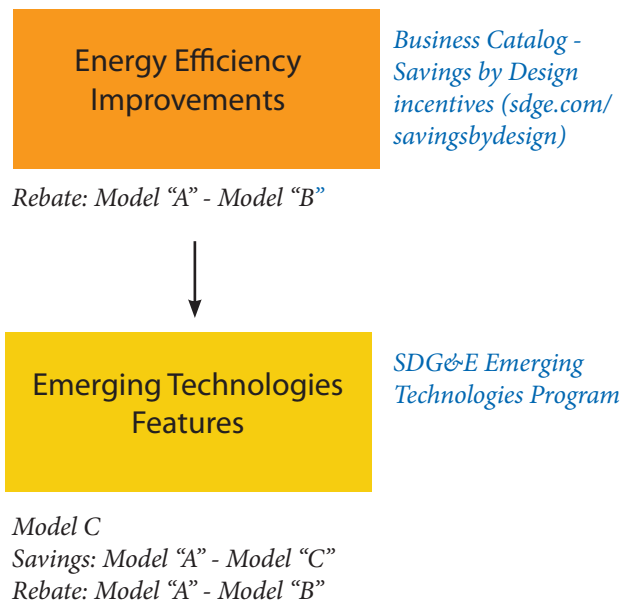


Figure 5.2: SDG&E Incentive Program Options for Existing and New Construction



## 5.3 ENERGY CONSUMPTION ALLOWANCE INCENTIVE

The Energy Saving Incentive charts for each neighborhood were developed with two goals: First, develop a way to differentiate the neighborhoods based on activity needs and the overall type of neighborhood, ie: residential, retail and commercial. These needs and types were evaluated at the streetwall, mid-tower and crown levels. Second, based on the above, determine which neighborhoods and building sections required higher levels and which neighborhoods and building sections could be reasonably reduced.

Process:

1. For a typical weekend evening, determine which neighborhoods have the highest level of activity, providing the high end of allowable lighting for these neighborhoods.
2. From the above, create a hierarchy of neighborhoods with a broad category of low, medium, or high lighting allowance for each of the neighborhoods for a typical weekend evening.
3. Add further detail to each neighborhood to include low, medium, and high values for the streetwall, mid-section, and crown for each neighborhood for a typical weekend evening.
4. Determine reasonable percentages of Title 24 based upon those low, medium, and high values for each portion of a typical building for each neighborhood.
5. Develop a similar weekday chart showing how those percentages could be reduced during the weekdays with most of the reduction in the midsection and crown.
6. Develop post-curfew levels where allowances can be lower still.

### 5.3.1 Determination of Percentage Reduction:

The overall goal was to use Title 24 as a benchmark and look for opportunities where the lighting energy could be reasonably reduced. Current energy incen-

tive programs are attempting to encourage reductions to 20 percent below Title 24. We agreed that this was reasonable and used this as a base target reduction.

1. Hardscape is one of the most important areas due to safety of pedestrians. These levels get no lower than 80 percent on a weekday, and reduce to 50 percent during post-curfew hours.
2. For the facade portion of the tables, the neighborhoods with highest allowance can get to 100 percent for all portions of the building, but these are the areas that deserve an extra lighting boost due to high pedestrian activity.
3. Most building areas are limited to 80 percent as a maximum, since this saves 20 percent below Title 24, but can still make a facade lighting impact. As a medium value, 50 percent is used, and 20 percent for a low value.
4. In residential areas, the mid section is not allowed any facade lighting after curfew.
5. Typically, facade levels after curfew are either 0- or 10- percent, to maintain an active skyline after curfew, while using minimal energy.

SEE CENTRE CITY GREEN - GREEN BUILDING INCENTIVE PROGRAM - SUBMITTAL MANUAL

CENTRE CITY GREEN SUSTAINABILITY INCENTIVE CHECKLIST											
Project Name/Address					Sustainability Points =						
Select Project type: Mixed Use					Tier Ranking =						
SF of Building: 225,000					Does Not Qualify						
Number of Residential Units: 150					Green = 25+ High Performance Green = 45+ Signature Green = 60+						
Number of Hotel Rooms					Total Points Possible = #N/A						
# of Building Occupants: 200					Annual kWh Saved = #N/A						
Select Path: Prescriptive					Annual MT CO2e Saved = #N/A						
Select Application Stage: Entitlement					Annual gallons H2O Saved = 1,094,710						
Indicator Impact	Energy	Water	Materials	Indoor Air Quality	Green IS	Path	Green Measure	Points Possible	Attained	Instructions	Points Attained
Performance							CalGreen Tier 1	25	<input type="checkbox"/>		
							CalGreen Tier 2	45	<input type="checkbox"/>		
							LEED Silver	45	<input type="checkbox"/>		
							LEED Gold+	60	<input type="checkbox"/>		
							Natural ventilation	10	<input type="checkbox"/>		
Prescriptive							On-site PV: 30 kW	10	<input type="checkbox"/>		
							Cogeneration: 30 kW	20	<input type="checkbox"/>		
							Exterior shading	5	<input type="checkbox"/>		
							70% Energy Star equipment / appliances	10	<input type="checkbox"/>		
							High efficiency plumbing fixtures	15	<input type="checkbox"/>		
							Recycled Water	#N/A	<input type="checkbox"/>		
							Chemical-free cooling tower	5	<input type="checkbox"/>		
							Daylighting with controls	5	<input type="checkbox"/>		
							High efficiency water heating	15	<input type="checkbox"/>		
							Demountable Partitions	5	<input type="checkbox"/>		
							Exterior Lighting	5	<input type="checkbox"/>		
							Enhanced Mobility	5	<input type="checkbox"/>		
							Green Streets	5	<input type="checkbox"/>		
							Eco-Roof	5	<input type="checkbox"/>		
							Audit & Retrofit Fund	5	<input type="checkbox"/>		
						Savings by Design	100	<input type="checkbox"/>			
						Innovation	5	<input type="checkbox"/>			

Exterior Lighting

Figure 5.7: Centre City Green Electronic Checklist

# MID-BLOCK STREETLIGHT- ING

# 6

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## 6.0 MID-BLOCK STREETLIGHTING

### Intent Statement

The Lighting Plan proposes a transition from high-pressure sodium luminaires to more energy-efficient broad spectrum mid-block streetlights that minimize light pollution and glare, lower life cycle costs, and produce a better rendered nighttime environment with greater visual clarity.

### Existing Mid-Block Lighting

Mid-block street lighting in an urban environment serves many functions. It provides for safety and security lighting for both pedestrians and motorists. It can emphasize the character of a neighborhood and strengthen the success of a commercial street.

The existing mid-block lighting system utilizes acrylic or glass prismatic acorn-shaped globes that direct light toward the street with varying success (Figure 6.1). It is equipped with internal optics to either partially block upward light or re-direct it downward. Neither of these optical systems completely eliminates unwanted upward light. Since the light source is directly visible, a large amount of glare is produced at street level viewed by adjacent pedestrians and residents (Figure 6.2). In some cases, complaints about unwanted light has resulted in the offending zone of light being blocked out with paint on the inside of the globes.

Optical retrofits to the existing system that are intended to save energy and address light pollution and glare have resulted in an inefficient luminaire that still wastes energy by blocking a considerable amount of the light that is created by the lamp. The acorn luminaire that is currently employed in downtown is simply not designed to address light pollution, which is only intensified when retrofitted with a broad spectrum lamp.

Chapter 6 provides a strategy for the selection of new mid-block luminaires that should be used as guidance when engaging the public, conducting a pilot project, and updating the Streetscape Manual with detailed specifications for implementation.

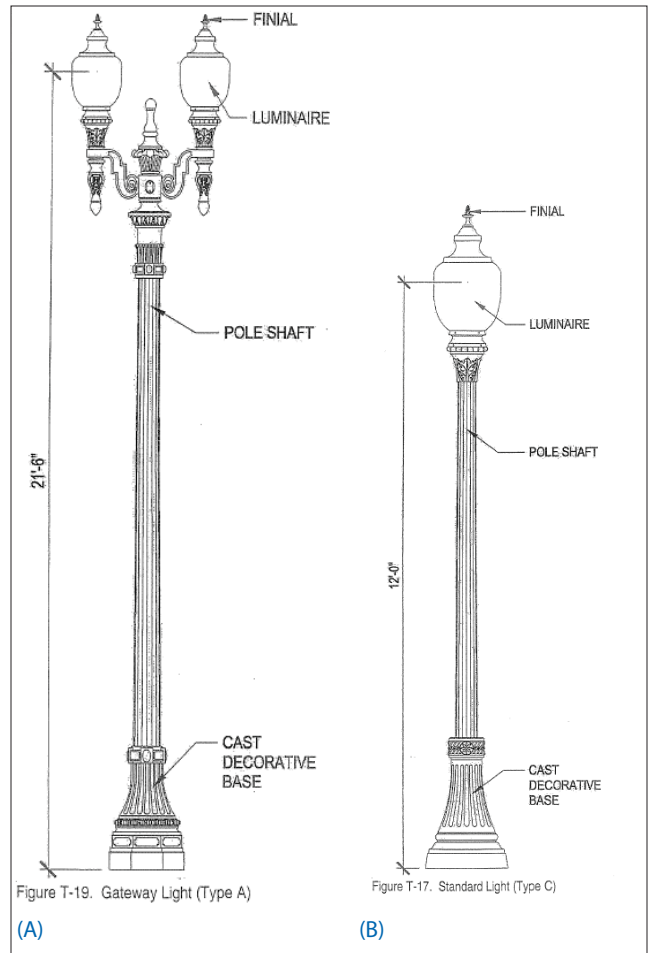


Figure 6.1: CCDL Streetscape Manual: Mid-Block Streetlights. (A) Gateway Light, (B) Standard Light.

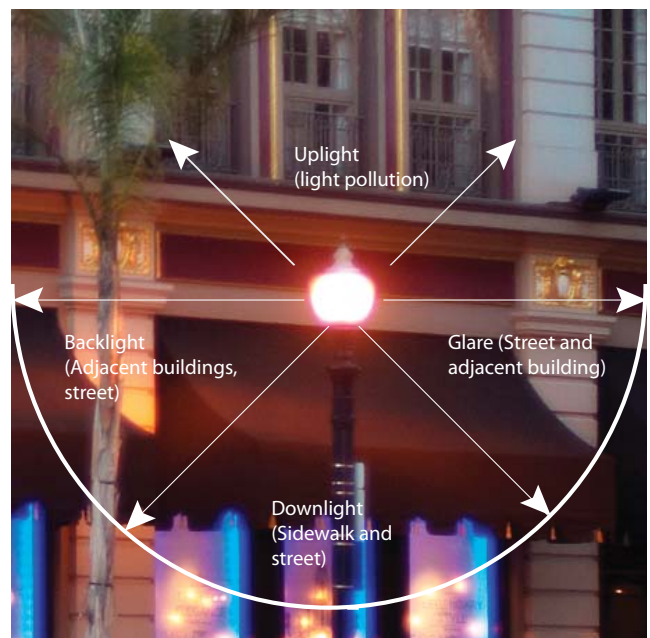


Figure 6.2: Example of glare from the current Standard Lights.



### 6.1 STRATEGY

With an emphasis on energy and sustainability, three strategies for broad spectrum optical systems are identified: (1) Modernized Acorn Mid-Block Strategy, energy-efficient luminaires that maintain the “antique” acorn appearance of the current luminaire, but aim light downwards with minimal glare; (2) Ceremonial Mid-Block Strategy, energy-efficient luminaire that can be modern or “antique” in appearance, appropriate for “ceremonial streets” with larger rights-of-ways (Broadway, Park Boulevard and Market Street; and; (3) Green Street Mid-Block Strategy, modern luminaires and poles for designated green streets that minimize light pollution and maintenance to the greatest extent.

To enhance public discourse, three luminaire options have been identified per optical system that offer a range of design characteristics and BUG rating target performance.

The three-option lighting strategy provides for flexibility in the decision-making process. These strategies allow for an orderly transition and phasing over a period of time that maintains the acorn appearance and is visually compatible with the nearly 3,500 existing acorn luminaires installed throughout downtown. To lower initial costs, replacing the existing acorn luminaire of the existing mid-block light that maintains the current pole and foundation should be evaluated. The Green Street Mid-Block Strategy defines modern luminaire designs for designated green streets; however, this strategy could also be evaluated for replacing the current acorns, area-wide, if there is a desire to have an entirely new appearance, and more importantly, if budgets allow implementation on a large enough scale to maintain visual consistency.

#### Light Distribution

The following characteristics that determine appropriate lighting solutions shall be studied on a case-by-case basis, as various streetscapes will each have unique



Photo 6.1: Modernized acorn style with finial details.



Photo 6.2: Modernized acorn style with minimal decorative details.



Photo 6.3: Double Gateway example.



Photo 6.4: A green street in Portland, Oregon includes storm water bio-swales, wider sidewalks and modern LED luminaires. See 6.4 Green Street Mid-Block Option #1



Photo 6.5: Modern gateway lights can provide character to the street.



Photo 6.6: Modern gateway luminaires can add to the verticality of a street or pedestrian pathway.

demands that will need to be addressed individually. The Illuminating Engineering Society of North America (IESNA) defines roadway and area luminaires by their photometric properties and distance to the half maximum candela trace and the maximum candela value. The classifications allow designers to choose a luminaire that will perform well within a given set of parameters, pertaining to street width, pole spacing and desired light spread appearance.

Chapter 6 uses IESNA's lateral classifications for each proposed optical system, describing lateral light distribution with regards to the lighted area width. Based on the type of street (residential or commercial), two classifications are identified per optical system:

**Type III** - Asymmetrical distribution of light. With wider illumination pattern, more forward throw and less backlight. Suitable for streets with narrow sidewalks or residential adjacencies.

**Type V** - Symmetrical distribution of light being essentially the same at all lateral angles around the luminaire. The symmetrical options might be appropriate where higher nighttime pedestrian activity is anticipated, i.e. restaurant, theater and retail areas. Symmetrical layouts may require a closer spacing to obtain reasonable light levels for both the sidewalk and the street.

### Luminaire Styles

Examples of luminaires provided in this chapter demonstrate that a lamp source can be designed within a luminaire or modern form aiming light downwards with minimal glare and upward light. By replacing the entire fixture and utilizing newer technologies (i.e: induction, ceramic metal halide or LED) with an optical system specifically designed for the lamp source, a wider range of styles can be explored while maintaining



an optimal distribution for mid-block locations. As a result, less sky glow and light pollution can be produced while tailoring light intensities and energy usage for each neighborhood, depending on levels of activity. See Photos 6.1 to 6.9.

There are some differences in costs and maintenance that should be addressed. Modern styles that utilize simple pole designs are easier to maintain than the versions with additional detail. The existing luminaire is labor intensive simply to replace lamps because of the numerous parts that must be removed. The glass and acrylic components are also prone to breakage. A modern style can be designed to perform more efficiently with reduced life cycle costs, and potentially, lower initial fixture costs because the architectural detail is minimized. For these reasons, many large cities have moved from the acorn appearance to more simple and modern styles.

### Maintenance

The Downtown San Diego Partnership- Clean and Safe - Property Business Improvement District (PBID) is responsible for the maintenance and replacement costs of mid-block streetlights. Little Italy Association (LIA) Maintenance Assessment District is responsible for maintenance in the Little Italy Project Area. Both LIA and PBID contracts back with the City for the actual maintenance duties. Prior to finalizing a specification for implementation, the luminaire must successfully meet qualifications that are important to PBID and the City, such as general maintenance, replacement costs, and total annual costs of ownership.

Lastly, standardizing a color is an important aspect of maintenance, both for stock and for touch up needs due to damage or graffiti. Downtown has three colors. CCDC Blue is the standard used throughout a majority of downtown, black is used throughout the Gaslamp Quarter and both Little Italy and the Asian Pacific Thematic District have custom RAL colors (both Maintenance of which are shades of dark green). Since



Photo 6.7: Multiple luminaires can be attached to a single pole for greater lighting emphasis.



Photo 6.8: Luminaires can have a simple and minimal design.

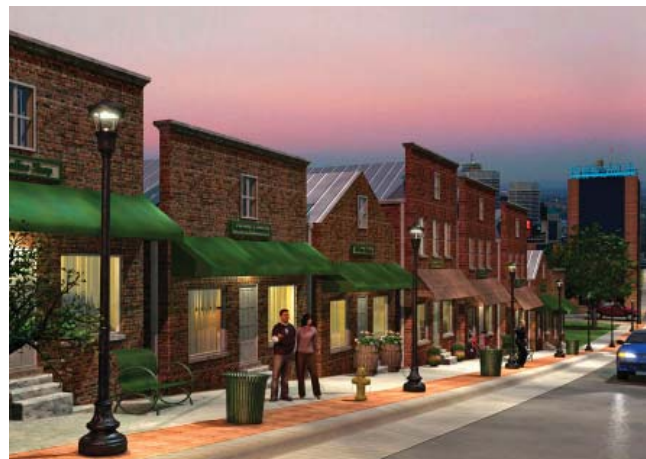


Photo 6.9: The aesthetic of a luminaire can enhance the appearance of a pedestrian pathway.

Green Streets emphasize efficiency, these poles should be natural, powder-coated silver. A review of all options may result in the selection of four standard poles, two heights for a decorative and a non-decorative style. This will result in a minimum amount of stock required to be on hand for damaged poles.



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## 6.2 OPTICAL SYSTEM EXPLANATION

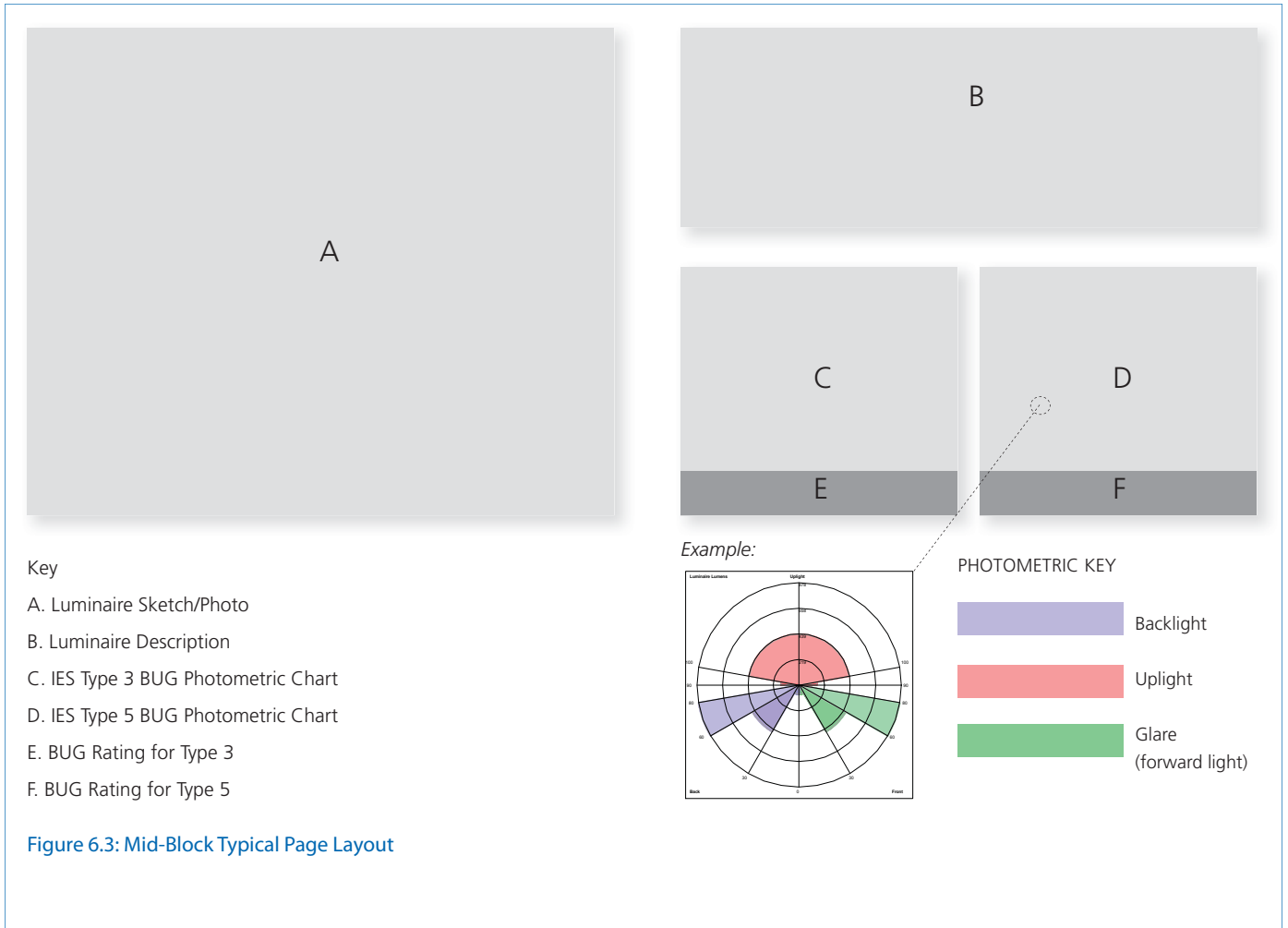


Figure 6.3: Mid-Block Typical Page Layout

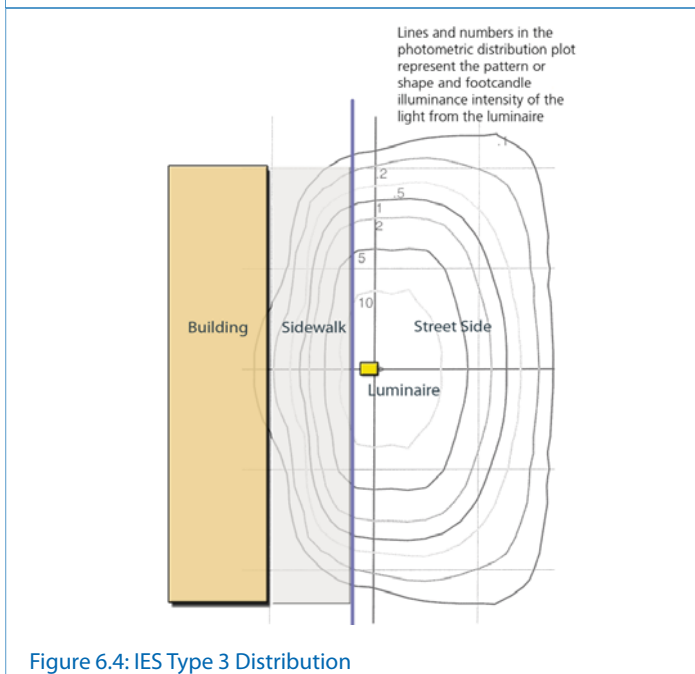


Figure 6.4: IES Type 3 Distribution

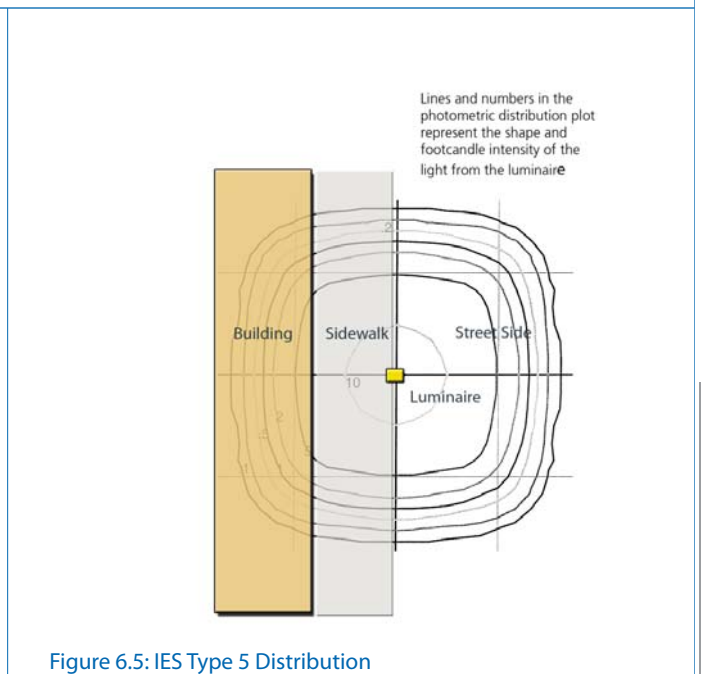


Figure 6.5: IES Type 5 Distribution

# 6.3 “MODERNIZED” ACORN MID-BLOCK STRATEGY

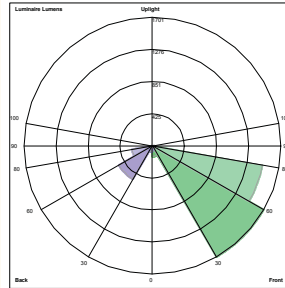
**OPTION 1**



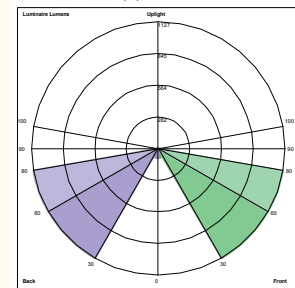
Photo 6.10

See Photo Reference: Photo 6.13

Decorative top cover designed for ease of maintenance with plug-in electrical module. Precision optical system maximizes post spacings while maintaining uniform illumination. Luminaire should have a tempered glass lens at the bottom of the optics.



Type 3



Type 5

BUG Rating : B1-U3-G2

BUG Rating : B2-U3-G2

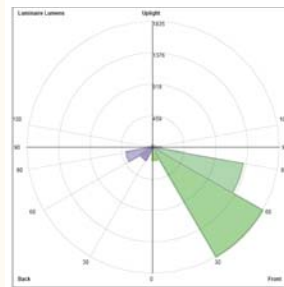
**OPTION 2**



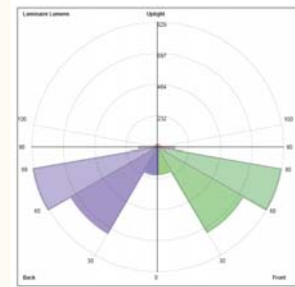
Photo 6.11

See Photo Reference: Photo 6.14, 6.15 and 6.16

Similar optical design as Option #1, but with slightly less ornamentation and design detail.



Type 3



Type 5

BUG Rating : B1-U2-G2

BUG Rating : B2-U2-G1

**OPTION 3**

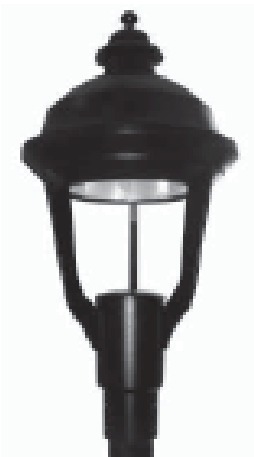
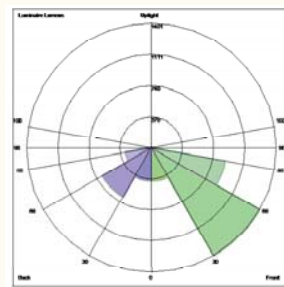


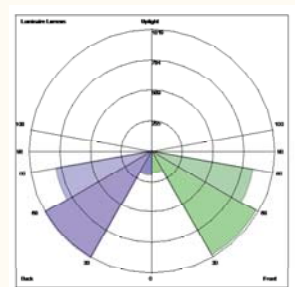
Photo 6.12

See Photo Reference: Photo 6.17

Similar optical performance as Option #1, but with a more contemporary and simple design



Type 3



Type 5

BUG Rating : B1-U1-G1

BUG Rating : B2-U1-G1

PHOTOS REFERENCE



Photo 6.13



Photo 6.14



Photo 6.15

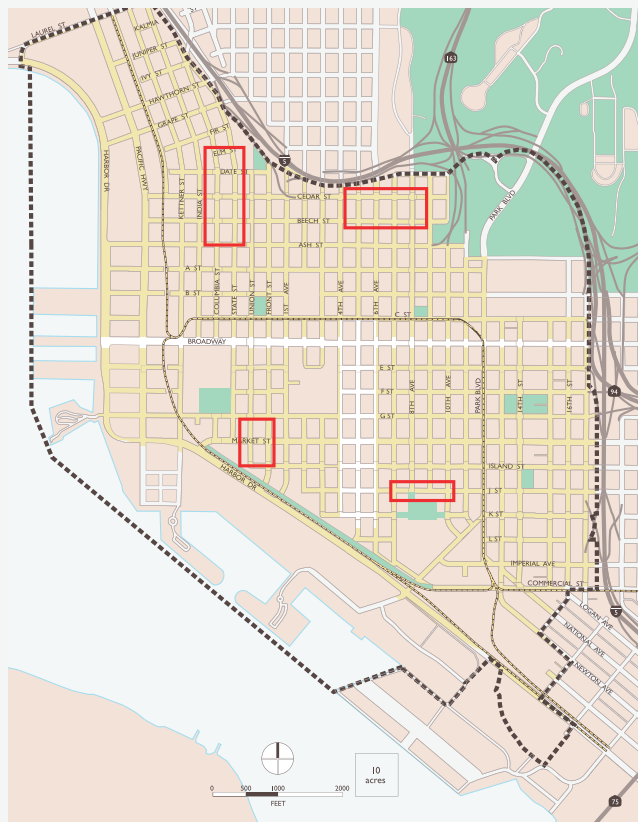


Photo 6.16



Photo 6.17

PILOT PROJECT



Possible Pilot Areas

The objective of this pilot project is to evaluate light quality, photometric distribution, as well as variations of decorative aesthetics that are relative in appearance to the existing acorns. Retrofit of the acorn head of an existing mid-block street light versus a new pole and foundation should be evaluated for feasibility.

Ideally two street blocks in downtown should be selected for testing, evaluating lighting intensities relative to commercial and residential activities. Options identified in this section could be installed on different streets to compare visual acceptance within the neighborhood, lighting performance and efficiency. Both Type III and Type V optics could be tested to determine which distribution is most appropriate for the neighborhood. See figures 6.4 and 6.5.

Figure 6.6: Possible Modernized Acorn Pilot Project areas.



# 6.4 CEREMONIAL MID-BLOCK STRATEGY

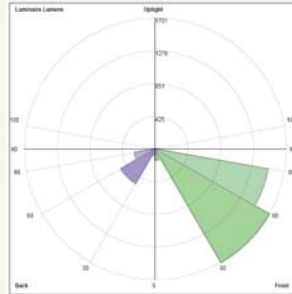
## OPTION 1



Photo 6.18

See Photo Reference: Photo 6.20 and 6.21

Utilizes the same design as the current HPS teardrop luminaires on Park Boulevard but with the LED optical system in the head of the fixture, aiming the light downwards. Designed for light control and ease of installation and maintenance.



*For dual-head teardrop arrangement, only IES Type 3 is suggested*

Type 3

BUG Rating : B1-U0-G1

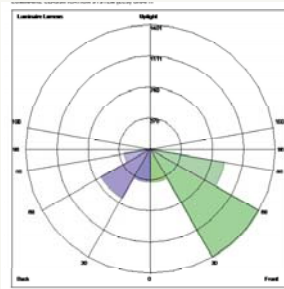
## OPTION 2



Photo 6.19

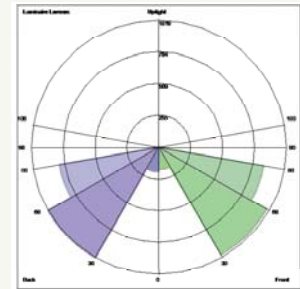
See Photo Reference: Photo 6.22

Through the use of vertical support arms and modernized acorn luminaire, a transition from the current downtown style can be updated to a modern "gate-way" appearance.



Type 3

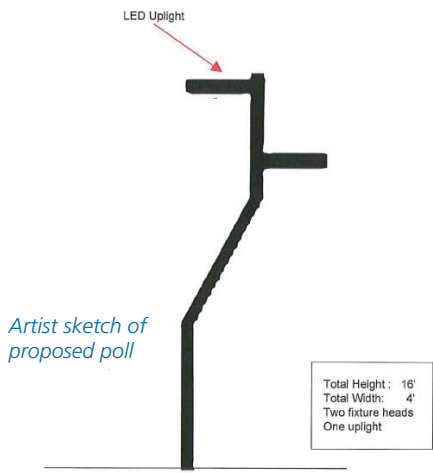
BUG Rating : B1-U1-G1



Type 5

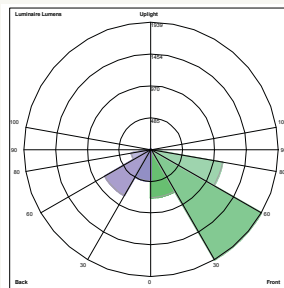
BUG Rating : B2-U1-G1

## OPTION 3



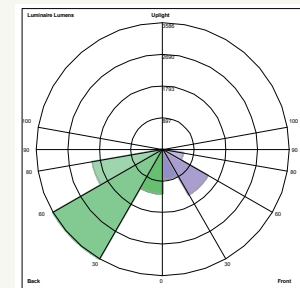
*Artist sketch of proposed poll*

Option #3 is the luminaire assembly similar to that proposed for NEVP Phase 1, located on Broadway between Harbor Drive and Kettner Boulevard. The Lighting Plan proposes that this luminaire be extended to 4th Avenue along Broadway.



Type 3

BUG Rating : B1-U0-G1



Type 5

BUG Rating : B1-U0-G1

PHOTOS REFERENCE



Photo 6.20



Photo 6.21



Photo 6.22

PILOT PROJECT - PARK TO BAY PHASE III

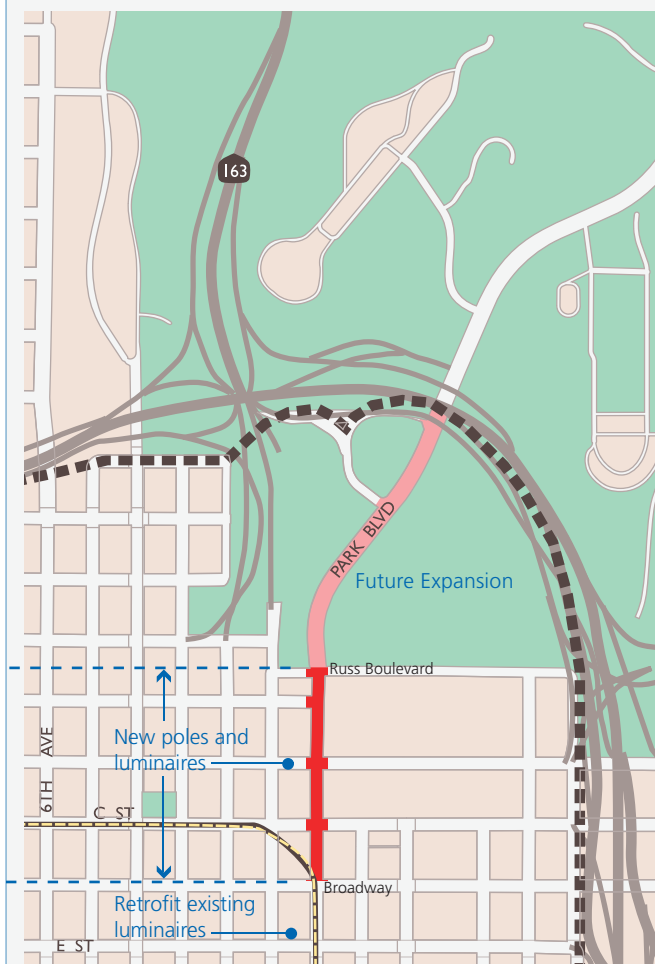


Figure 6.7: Park Boulevard

The objective of this pilot project is to support the Park-to-Bay Phase III, located between Broadway and Russ Boulevard (highlighted in red), with Option #1, that would include new pole and fixtures with double acorn tear drop fixtures that resemble the fixture south of Broadway. A preliminary phase of the project could include the retrofit of the existing HPS double teardrop luminaires along Park Boulevard, south of Broadway.

Key issues for consideration: North of Broadway: one pole height and spacing. Dual-head luminaires should be parallel to the street. The ability to accommodate banners is important since Park Boulevard is considered a gateway into downtown. The project should be coordinated with any proposed existing median lighting as part of the Park-to-Bay improvements, either in lieu of or in addition to traditional lighting from the curbs. Due to the width of the street, IES Type 5 is probably appropriate for a more symmetrical light distribution.

A future phase that extends the project from Russ Boulevard to the I-5 exit ramp (in light red) would depend on participation from other maintenance entities. Public outreach should be coordinated with the City College and San Diego Unified School District.

# 6.5 GREEN STREET MID-BLOCK STRATEGY

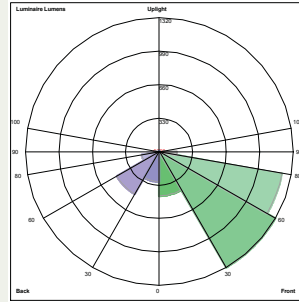
## OPTION 1



Photo 6.24

See Photo Reference: Photo 6.27 and 6.28

Sculptural design aims the light directly downward and utilizes a simple pole and base. This option provides for highly optimized light distribution performance with reduced maintenance costs.



Type 3

BUG Rating : B1-U1-G1

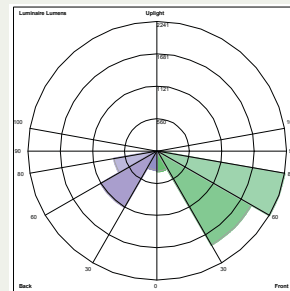
## OPTION 2



Photo 6.25

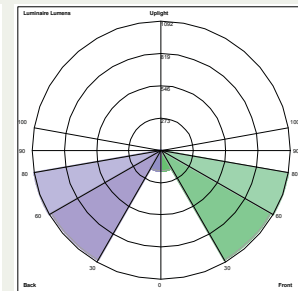
See Photo Reference: Photo 6.29

A thin and simple square shape that aims all light downwards, utilizing a simple pole and base for reduced maintenance costs. Provide a completely different appearance from below as well as the long view from down the street.



Type 3

BUG Rating : B2-U0-G2



Type 5

BUG Rating : B3-U0-G1

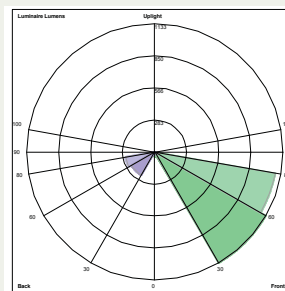
## OPTION 3



Photo 6.26

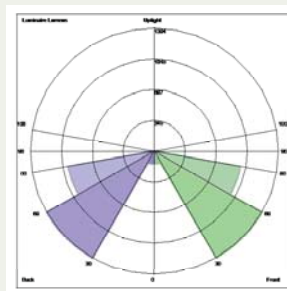
See Photo Reference: Photo 6.30

This third option is a modern 'post top' style that has been upgraded to use energy efficient sources but is obviously different due to its thin design



Type 3

BUG Rating : B1-U1-G1



Type 5

BUG Rating : B2-U1-G1

PHOTOS REFERENCE



Photo 6.27



Photo 6.28



Photo 6.29



Photo 6.30

PILOT PROJECT

The objective of the green street pilot project is to test all three options and evaluate light quality and luminaire aesthetics. Findings from this pilot project could be used to implement one luminaire for all designated green streets or utilize a different luminaire per green street based on street activity and character.

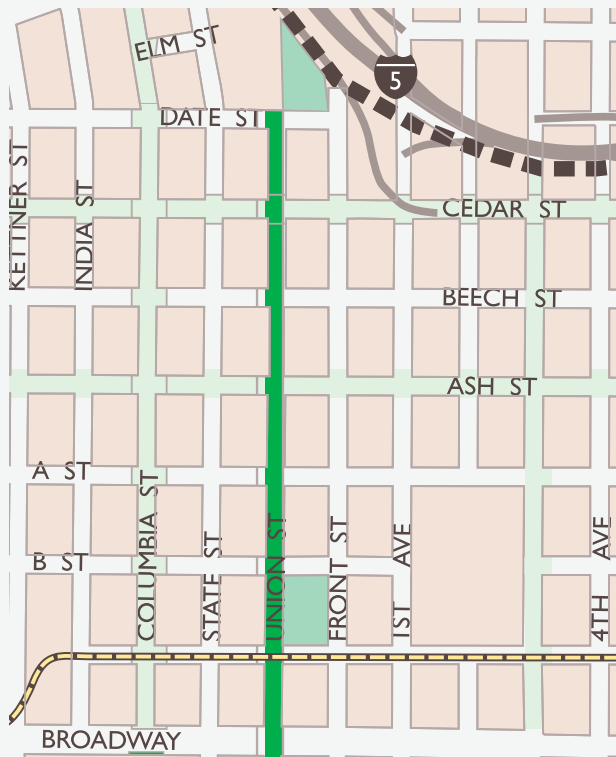


Figure 6.8: Green Street Pilot Project at Union Street.

Since green street luminaires are not compatible with the existing acorn decorative poles, new poles will be used, and appropriate pole spacing and heights should be evaluated.

Green street options identified in this section could be installed on different streets to compare visual acceptance within the neighborhood, as well as performance and efficiency. Both Type III and Type V optics could be tested to determine which distribution is most appropriate for the neighborhood. Orientation to the street and/or sidewalk should also be reviewed. Reference Figure 6.4.

Green streets should emphasize sustainability. Luminaire control and monitoring systems could be evaluated as part of the pilot project to demonstrate luminaire performance tracking or energy reduction measures including occupancy and daylighting sensors.

If public feedback concludes that an option has desirable aesthetics and life cycle costs, possible expansion to additional streets, downtown neighborhoods and other areas in place of the acorn style should be evaluated.



## 6.6 PILOT PROJECT OVERVIEW

### Intent Statement

Prior to establishing a specification for a mid-block street light luminaire as part of the Centre City Streetscape Manual update, it will be necessary to initiate a pilot project to evaluate the quality of light, luminaire aesthetics, pole heights, spacing and possible replacement of existing poles and foundations.

### Overview

The following considerations should be evaluated as part of the “scope of work” for a pilot project:

- The three options that are provided per each optical system should be evaluated within a public engagement process, focusing the discussion on the quality of light relative to street activity levels, and the aesthetics of the luminaire relative to neighborhood character.
- Physical mounting and orientation to the street and/or sidewalk should be considered. Type V may be more appropriate in a post-top mount where Type III would work well with a mast arm. The streetlight heights and spacing may vary between Green and Ceremonial streets. Ceremonial streets, such as Broadway, Park Boulevard and Market Street, have greater street widths and will require higher poles to achieve desired coverage. Taller poles will also require larger luminaires to be in scale with each other. Green streets are primarily located in residential areas and may require less lighting intensity with a lower pole height that is compatible to a pedestrian scale.
- Coordination with street trees may influence spacing and should be evaluated.
- Post tops with a lighting distribution that aims light onto sidewalks but away from residences may be more appropriate in residential areas, while units mounted at greater heights may be more appropriate in a commercial district.
- For the modernized acorn luminaires, a portion of the test area should evaluate utilizing the existing pole and base infrastructure as a way to lower costs and maintain visual consistency with the existing luminaires.
- Pilot project may also demonstrate control strategies that have the potential to lower lighting intensities based on activity levels with or track luminaire performance and report maintenance needs.
- BUG ratings provided for each luminaire option can be used as the basis of performance.

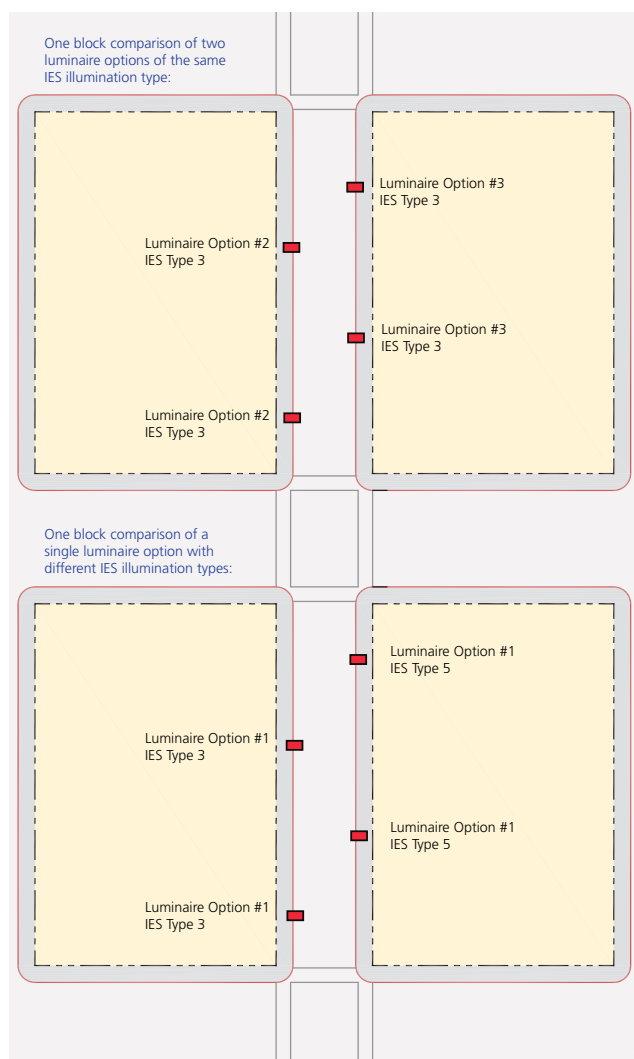


Figure 6.4: Two-Block Pilot Project Concept Layout

# GLOSSARY AND FIGURES

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## 7.1 GLOSSARY

### A

**Architectural lighting** - Lighting that enhances the expression and characteristics of the building, that could be associated with specific districts, neighborhoods and places.

### B

**Background Uplight and Glare (BUG)** - The acronym describes the types of stray light escaping from an outdoor lighting luminaire. "B" stands for backlight, or the light directed in back of the mounting pole. "U" stands for uplight, or the light directed above the horizontal plane of the luminaire, and "G" stands for glare, or the amount of light emitted from the luminaire at angles known to cause glare.

**Backlighting** - Backlighting refers to the process of illuminating the subject from the back

**Building Luminance Maximum** - is the maximum recommended luminance, or measure of perceived brightness, given for individual sections based upon location within neighborhoods.

### C

**California Green Building Standards Code ("CAL-Green")**- is a code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality.

**California Department of Fish and Game** - <http://www.dfg.ca.gov>

**Candelpower** - is a photometric measure of the luminous intensity of light travelling in a given direction.

**CEC** – California Energy Commission

**Centre City Development Corporation (CCDC)** - CCDC is the public, non-profit corporation created by the City of San Diego to staff and implement Downtown redevelopment projects and programs.

**Centre City Green** - Downtown San Diego's Sustainability Master Plan.

**Centre City Planned District Ordinances (PDO)** - land use and development regulations for the Centre City Planned District.

**Centre City Streetscape Manual** - is used for public right-of-way streetscape improvements for public and private developments. **Ceremonial Street** - a downtown street with a right-of-way greater than 80 feet that is used for special events.

**CPTED** - Crime Prevention Through Environmental Design.

**Commercial Street** - is a land use overlay applicable to certain streets in the Centre City Planned District as illustrated in Figure D.

**Crown** - is the upper 20 percent of a tower, measured above the base or mid-section to the top of the building, including mechanical penthouses.

**C.R.I. Color Rendering Index** - is a quantitative measure of the ability of a light source to reproduce the colors of various objects faithfully in comparison with an ideal or natural light source.

**California Building Standards – Energy Code Title 24** - Established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.

**Color rendering** - Effect of an illuminant on the color appearance of objects by conscious or subconscious



comparison with their color appearance under a reference illuminant.

**Concept Box** - a lighting concept and/or narrative pertaining to the section.

**Correlated Color Temperature (CCT)** - is the temperature of the Planckian radiator whose perceived color most closely resembles that of a given stimulus at the same brightness and under specified viewing conditions. Typically expressed in degrees Kelvin from 2,700 (warm) to 5,000 (cool).

### D

**Dark Sky** - The reduction of light pollution so people can see the stars, to reduce the effects of unnatural lighting on the environment, and to cut down on energy usage.

**Downtown Community Plan (DCP)** - is the general and long-range planning document for downtown San Diego.

**Dynamic Light** - a term used for lighting that is not static, therefore varying in color temperature and/or light intensity; can be programmed to create sequences of color-changing scenarios or controlled to dim after a specific time of day.

### E

### F

**FAA** – Federal Aviation Administration- is the United States Department of Transportation agency authorized to regulate and oversee all aspects of civil aviation in the United States of America. <http://www.faa.gov>

**Festoon lights** - A decorative chain of lights hung in a curve as a decoration.

### G

**Gateway** - as identified in the DCP, gateways form exciting and noteworthy experiences on arriving in downtown.

**Green Streets** - streets designated in the DCP as part of the open space network, connecting parks and amenities, with wider sidewalks, canopy trees and bicycle facilities.

**Gaslamp Quarter PDO** - refers to the Gaslamp Quarter Planned District Ordinance development regulations.

**Glare** - A form of light pollution or over-illumination.

**Guidelines** - are recommendations, a general rule, principle, or piece of advice.

### H

**Hardscape** - refers to the paved areas like streets & sidewalks.

**High Pressure Sodium (HPS) Light fixtures** – contain additional elements such as mercury, and produce a dark pink glow when first struck, and a pinkish orange light when warmed. Some bulbs also briefly produce a pure to bluish white light in between. This is probably from the mercury glowing before the sodium is completely warmed. These lamps have higher purchase cost, shorter life and lower light efficiency.

### I

**Induction Lighting** - is similar to a fluorescent lamp in that mercury in a gas fill inside the bulb is excited, emitting UV radiation that in turn is converted into visible white light by the phosphor coating on the bulb.

**Illuminating Engineering Society (IES)** - The IES's is an organization whose mission is to improve the

lighted environment by bringing together those with lighting knowledge and by translating that knowledge into actions that benefit the public.

**International Dark-Sky Association** - is a U.S.-based non-profit organization incorporated in 1988 by founders Dr. David Crawford, a professional astronomer, and Dr. Timothy Hunter, a medical doctor/amateur astronomer. The mission of the IDA is “to preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting.”

**Injection Molded** - a manufacturing process for producing parts from both thermoplastic and thermosetting plastic materials. Material is fed into a heated barrel, mixed, and forced into a mold cavity where it cools and hardens to the configuration of the cavity. Injection molding is common process used by lighting manufacturers for optical lenses and fixtures with plastic/polycarbonate components, such as globes or acorn enclosures.

**J**

**K**

**L**

**Luminance** - the intensity of light emitted from a surface, per unit area, in a given direction.

**Light Pollution** - Any adverse effect of artificial light including sky glow, glare, light trespass, light clutter, decreased visibility at night, and energy waste.

**Light Emitting Diode (LED)** - is a semiconductor light source.

**Luminaire** - is an electrical device used to create artificial light and/or illumination, by use of an electric lamp.

**Lighting Intensity Chart** - conceptual Chart that in-

dicates the intensity of light for a typical week.

**“Layers of light”** - a type of light: safety, architectural, and special. The layers become combined to give the complete lighting scene.

**M**

**Mid-Section** - or “Mid-Zone” refers to that portion of a building above the streetwall and below the tower. The mid-section only applies within the Large Floorplate and/or Employment Required overlay districts as illustrated in Figure C of the PDO.

**Main Street** - is a land use overlay applicable to certain streets in the Centre City Planned District as illustrated in Figure D of this Division.

**N**

**Neighborhood Centers** - are areas active at street level, lined with buildings that engage the pedestrian. They are practical destinations for errand running, nodes for local public functions such as libraries, and gathering areas for social and recreational use. Strategic height limitations and building massing requirements will maximize sun exposure.

**North Embarcadero Visionary Plan (NEVP)** - public infrastructure program to improve the downtown San Diego’s waterfront with streetscape enhancements and public art.

**Night Cycle** - can be conceptualized as the daily lighting cycle, from dusk to dawn, when artificial lighting replaces natural light to illuminate the continuation of activities of commerce and life.

**Night Baseline** - is based on wattage (and amount of lighting intensity) for commercial and residential areas.

**O**

**Optic Technology** - used in reference to luminaires and lighting as it relates to the properties of the lamp type, reflector and lens combination that produce a distinct lighting pattern or distribution. For example optical technology of an LED street lighting luminaire bends, reflects and refracts light in a different manner than the optical properties of a luminaire fitted with a linear fluorescent lamp.

P

Q

R

S

**Streetwall** - is the building façade along a property line adjacent to any public street. The street wall may include arcades, colonnades, recessed entrances, private open space, and urban open space.

**San Diego Unified Port District (Port)** - Governed by a seven member Board of Port Commissioners, the Port oversees two maritime cargo terminals, a cruise ship terminal, 17 public parks, various wildlife reserves and environmental initiatives, a Harbor Police department and the leases of more than 600 tenant and sub-tenant businesses around San Diego Bay.

**Saturated Light** - the perceived intensity of a specific color or the colorfulness relative to its own brightness; determined by a combination of light intensity and how much it is distributed across the spectrum of different wavelengths; the more "white light" is mixed with the color, the less saturated, and therefore more muted or subtle, it appears.

**Symmetrical (Type V)** - references IES Outdoor Luminaire Classification. The Type V distribution is generally considered to be circular pattern. A Type V pattern may also be square depending on the luminaire optics and lateral distribution.

**Safety Lighting** - Minimum level of lighting needed for safety during all evening hours when artificial light is needed to augment or replace natural light.

**Special Lighting** - Represents weekend, seasonal and special event lighting that reflects the lighting needs of increased social activity.

**Sodium Vapor Lamp** - A gas discharge lamp which uses sodium in an excited state to produce light. There are two varieties of such lamps: low pressure and high pressure. Because sodium vapor lamps cause less light pollution than mercury-vapor lamps, many cities that have large astronomical observatories employ them.

T

U

V

W

**Washing Light** - describes a lighting technique for covering a large surface area with an even amount of light. Up or downlighting a facade or building crown could be achieved using washing light techniques.

**Warm Color** -similar to the color of an incandescent lamp. Typical in the range of 2,700 to 3,100 Kelvin.

X

Y

Z

## 7.2 LIST OF FIGURES

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- 4.16 Images of downtown San Diego (E)
- 4.17 (1): Gaslamp Sign (E), (2): Christmas Storefront (A), (3): Gaslamp dining (E), (4), (5) and (6): Gaslamp architecture (E), (7) and (8) Macy's Christmas. New York City (A)
- 4.18 Images of downtown San Diego (E)

- 4.19 (1) and (2): Post Office Square. Philadelphia (C), (3): Sketch (F), (4): Residential Street. Istanbul, Turkey (A), (5): Residential Street. Madrid, Spain, (6): Street Median. Montreal, Canada
- 4.20 Images of downtown San Diego (E)
- 4.21 (1): Gaslamp Building (E), (2): Christmas Storefront (A), (3): Residential Street. Madrid, Spain (A), (4): Alta Rendering (E), (5): LED Panels (A), (6) PENDING (7): Macy's Christmas. New York City (A), (8) Video screens (C)

## Chapter 6

- 6.1-6.3,6.5-6.30 Examples of luminaires (M)
- 6.4 Portland Green Street (E)

