

Appendix B1

Digital Lighting Study



FRANCIS
KRAHE
& ASSOCIATES

The Bradbury Building
304 South Broadway, Suite 203
Los Angeles, CA 90013

+1 213 617 0477
fkaid.com

SUNSET JEWEL BOX
9176 Sunset Boulevard,
West Hollywood, California

LIGHTING STUDY

Prepared for:

City of West Hollywood

December 22, 2025

Table of Contents

1. Summary	5
1.1 Sign Lighting	6
2. Project Description	8
3. Glossary of Lighting Terminology	9
4. Review of Lighting Regulations & Reference Standards.....	12
4.1 Sunset Boulevard Specific Plan	12
4.2 California Code of Regulations, Title 24.....	13
4.3 California Vehicle Code, Division 11. Rules of the Road	15
4.4 IESNA Recommended Practices	16
5. Significance Threshold.....	16
6. Methodology	18
6.1 Existing Conditions Procedures	18
6.2 Project Analysis	18
7. Project Existing Conditions.....	21
7.1 Existing Conditions Monitoring Sites	22
7.2 Criteria	24
7.3 Monitoring Site Survey Data	24
8. The Project Analysis	33
8.1 Project Light Trespass Illuminance Analysis	33
8.2 Project Glare Analysis	37
8.3 Review of Nearby Existing and Proposed Signs	39
9. Conclusions.....	44
APPENDIX A: Concept Design Documents	45
APPENDIX B: City of West Hollywood Ordinance No. 19-1063, Attachment A, pgs. 13, 14, 15	53
APPENDIX C: 2019 CEQA MEMO & FINAL INITIAL STUDY / NEGATIVE DECLARATION, page 251	56
APPENDIX D: 2022 California Administrative Code, Section 10-114.....	57

APPENDIX E: 2022 California Energy Code, Section 140.7 Prescriptive Requirements for Outdoor Lighting 58

APPENDIX F: 2022 California Energy Code, Section 130.3 Sign Lighting Controls 63

APPENDIX G: 2022 California Energy Code, Section 140.8 Prescriptive Requirements for Signs 64

APPENDIX H: IESNA 10th Edition Lighting Handbook, Table 26.4, Nighttime Outdoor Lighting Zone Definitions 65

APPENDIX I: IESNA 10th Edition Lighting Handbook, Table 26.5, Recommended Light Trespass Illuminance Limits 66

APPENDIX J: Signs Lighting Illuminance Calculation (fc) 67

List of Tables

Table 1. Existing Conditions Lighting Criteria 24

Table 2. Measured Illuminance (fc) at Monitoring Sites 25

Table 3: Measured Luminance (cd/m²) at Monitoring Sites 26

Table 4: Signs Trespass Illuminance (fc) at 300 cd/m², WEHO Policy 34

Table 5: Signs Trespass Illuminance (fc) at 300 cd/m², CalGreen 35

Table 6: Project Signs Contrast Ratio @ 300 cd/m² 37

List of Figures

Figure 1: Project Site 8

Figure 2: Inverse square law diagram (hyperphysics.phy-astr.gsu.edu) 10

Figure 3: Minolta LS-100 meter 18

Figure 4: Sign Lighting Vertical Calculations Planes 19

Figure 5: Monitoring Sites 23

Figure 6: M-E1 September 19, 2024, 4:02 pm 27

Figure 7: M-E1 September 23, 2024, 8:36 pm 27

Figure 8: M-N1 September 19, 2024, 4:03 pm 28

Figure 9: M-N1 September 23, 2024, 8:47 pm 28

Figure 10: M-N2 February 3, 2021, 11:50 am 29

Figure 11: M-N2 February 15, 2021, 9:09 pm 29

Figure 12: M-W1 September 19, 2024, 3:58 pm 30

Figure 13: M-W1 September 23, 2024, 8:59 pm 30

Figure 14: M-W2 September 19, 2024, 3:59 pm 31

Figure 15: M-W2 September 23, 2024, 9:06 pm.....	31
Figure 16: M-S1 September 19, 2024, 4:07 pm.....	32
Figure 17: M-S1 September 23, 2024, 9:17 pm.....	32
Figure 18: Sign Lighting Calculation Rendered View.....	36
Figure 19: Project Illuminance at 1.4 fc Rendered View.....	40
Figure 20: Project Illuminance and 9229 Sunset at 1.4 fc.....	41
Figure 21: Project Illuminance and 9200 Sunset at 1.4 fc.....	42
Figure 22: Project Illuminance and 9169 Sunset at 1.4 fc.....	43
Figure 23: Project Illuminance and 9157 Sunset at 1.4 fc.....	43

This Lighting Study by Francis Krahe & Associate Inc. (Study) analyzes the proposed lighting associated with the Sunset Jewel Box (Project) located at 9176 Sunset Boulevard in the City of West Hollywood, California. The Project is a commercial use building located on the south side of the Sunset Boulevard right of way, to the east of the Cory Avenue intersection, and west of 9156 Sunset Boulevard.

This Study reviews the parameters that affect light trespass or glare (each as defined below) at adjacent sensitive use properties in the vicinity of the Project, reviews the applicable lighting metrics and regulations pertaining to artificial lighting, examines the existing lighting conditions within and surrounding the Project, and evaluates the Project's illuminated signage (Signs) to identify potential environmental impacts on surrounding sensitive use properties.

The methods of analysis utilized for this Study are based upon the recommended practices established by the Illuminating Engineering Society of North America (IESNA) for the practice of illumination engineering design and application, and the actual measurements of light sources and illuminated surfaces. IESNA reference publications include: American National Standards Institute (ANSI)/Illuminating Engineering Society (IES) OL-IM-01 Lighting Science Standards; ANSI/IES OL-IM-02 Lighting Practice Standards; ANSI/IES OL-IM-03 Lighting Applications Standards; ANSI/IES OL-IM-04 Lighting Measurements and Testing Standards; and ANSI/IES OL-IM-05 Lighting Roadway and Parking Facilities Standards. The ANSI/IES Standards replace the IESNA 10th Edition Handbook, which superseded the 9th Edition IESNA Handbook and various references published by IESNA prior to 2011.

1. Summary

This Study reviews the proposed Project (as described herein as Appendix A) with respect to light trespass and glare at adjacent sensitive use properties near the Project Site. These adjacent sensitive use properties are identified as the most sensitive use sites due to their close proximity to the Project and possible direct view of the Project Signs. Light intensity diminishes rapidly in relation to distance (see Section 3, Inverse Square Law). Therefore, more distant sensitive site locations will receive much lower light trespass illuminance and or luminance, and will therefore be less affected by the Project.

Exterior lighting issues are focused around two key subjects: light trespass and glare. These two technical terms are defined as follows:

- **Light Trespass¹** is the artificial light produced on a property that falls on an adjacent property. Light trespass is measured in terms of illuminance (foot-candles or metric units lux), and can be measured at any point and in any direction. Where Light trespass is evaluated the illuminance is measured perpendicular to the source of light, toward the source of light, at the property line, or the location where light would cause an issue. Light trespass is evaluated at night.
- **Glare²** occurs when either the luminance is too high or the range of brightness in a visual field is too large. A bright light source, such as a flood light or street light, viewed against a dark sky may be uncomfortable to look at, and may create a temporary sensation of blindness, which is referred to as disability glare. Glare is evaluated by measuring the luminance (footlamberts or metric units candelas per square meter) at the source of light, such as a digital sign, in comparison to the surrounding adjacent luminance. Contrast ratios define the extent of Glare within the field of view at any observer position. The Contrast ratio is determined by the variation of luminance within the field of view. "High," "Medium," and "Low" Contrast ratios are the comparison of peak measured luminance to the average luminance within a field of view: Contrast ratios greater than 30:1 (High); between 30:1 to 10:1 (Medium); and below 10:1 (Low), respectively. Contrast ratios above 30:1 are generally uncomfortable for the human eye to perceive. Any source luminance that is more

¹ IESNA Handbook, 10th Edition, 19.3: Light Pollution and Trespass, page 19.7

² IESNA Handbook, 10th Edition, 4.10: Glare, page 4.25

than 50 times the adjacent background will be viewed as prominent, and, may be viewed as distracting. Glare may occur either during the day or night.

This Study analyzes the Project's potential environmental impacts relating to lighting based on the Project's illuminated Signs, as described by the Concept Design Documents included in Appendix A of the Study.

1.1 Sign Lighting

The Project Sign lighting would ultimately comply with the requirements of the City of West Hollywood Sunset Boulevard Off-Site Signage Policy (WEHO Policy) as adopted as an amendment to the Sunset Specific Plan (Ordinance No. 19-1063) by the City of West Hollywood (Appendix B), which regulates sign types, location, size and operating characteristics of signage proposed on the Project site specifically and within the West Hollywood Sunset Specific Plan (Specific Plan) boundaries generally. For purposes of impact analysis, this Study analyzes the proposed Sign lighting against the WEHO Policy.

This Study utilizes the illumination standards for sign lighting as defined by WEHO Policy for residentially zoned properties adjacent within the City of West Hollywood for purposes of environmental analysis. Accordingly, the Sign lighting would comply with the following requirements:

- Sign light trespass illuminance less than 1.4 footcandles (fc) at residentially zoned properties adjacent to Sunset Boulevard within the Specific Plan boundary.
- Sign light trespass illuminance less than 0.74 footcandles (fc) at residentially zoned properties outside of the Specific Plan boundary, including residential properties within the City of Los Angeles.
- Illuminated signs will not exceed 6000 candelas/m² luminance during the day from sunrise until 20 minutes prior to sunset.
- Illuminated Signs will not exceed 300 candelas/m² at night from sunset until 20 minutes prior to sunrise.³
- From 2:00 a.m. until sunrise no animated content or moving patterns shall be permitted.
- Sign luminance shall transition smoothly from daytime luminance to nighttime luminance and vice versa.
- Illuminated Signs that have the potential to exceed 300 candelas/m² will include an electronic control mechanism to reduce sign luminance to 300 candelas/m² at any time when ambient sunlight is less than 100 footcandles (fc).
- Externally illuminated signs will incorporate design elements to limit the direct view of the light source surface at all exterior light fixtures to ensure that the light source cannot be seen from adjacent residential-zoned properties.

This Study demonstrates light trespass from the Project Signs at sensitive use properties adjacent to Sunset Boulevard within the Specific Plan boundary would be below the 1.4 footcandles (fc) limit for illuminated signs as defined by the WEHO Policy. There is no light trespass limit for commercial use properties, which are not considered light or glare-sensitive receptors. Therefore, this Study does not evaluate light trespass illuminance or glare from the Project Signs at commercial properties.

³ The sign light trespass would not exceed the established lighting threshold of 1.4 fc footcandles at any residentially zoned property line at 300 candelas/m² pursuant to WEHO Policy Section 5.A.4.

This Study also evaluates Project Sign light trespass illuminance at sensitive use properties more distant from Sunset Boulevard, outside of the Specific Plan boundary, with the maximum illuminance defined by the California Energy Commission for urban areas in California, Lighting Zone LZ3, 0.74 fc. The City of Los Angeles is near to the Project site to the north. The Los Angeles Municipal Code allows up to 3.0 fc of light trespass from sign lighting at residential properties. However, to ensure a conservative analysis, this Study analyzes light trespass at residential properties within the City of Los Angeles against the lower CalGreen threshold of 0.74 fc. This Study demonstrates the light trespass at all residential properties from the Project Signs outside of the Specific Plan boundary will be less than 0.74 fc.

Furthermore, glare from the Signs is evaluated with respect to adjacent residential properties and roadways. To present a conservative analysis, this Study evaluates the Signs with a maximum luminance of 6000 cd/m² during the day and 300 cd/m² at night with all Signs operating at all white. This Study confirms the contrast ratios, which compares the maximum Sign luminance to the existing average luminance measured at the Monitoring Sites, are less than 30:1. Therefore, the Project Signs would not create a new glare condition at adjacent residential properties. Glare at roadways is evaluated with respect to the standards identified in the California Vehicle Code, which defines maximum allowable luminance within drivers field of view for both day and night. This Study confirms the Signs would not exceed the maximum luminance defined by the California Vehicle Code at roadways during the day, night, twilight, and periods of low sun intensity. Therefore the Project Sign lighting would not create a significant source of glare to drivers.

The results of this Study indicate that the Project Sign lighting would not create a significant new source of light trespass or glare at residential properties or roadways.

2. Project Description

The Project consists of a new commercial development (Project) totaling approximately 53,030 square feet of floor area on an approximately 18,608 square feet property at 9176 Sunset Boulevard, West Hollywood, California (see Figure 1). The Project is a commercial use building located on the south side of the Sunset Boulevard right of way, to the east of the Cory Avenue intersection, and west of 9156 Sunset Boulevard. The Project includes illuminated digital Signs as described by the Concept Design Documents attached herein as Appendix A.



Figure 1: Project Site

3. Glossary of Lighting Terminology

Discussions of lighting issues include precise definitions, descriptions or terminology of the specific lighting technical parameters. The following glossary summarizes explanations of the technical lighting terms utilized in this Study and the related practice standards to facilitate discussion of these issues. The following technical terms are used in this Study.

Brightness: The magnitude of sensation that results from viewing surfaces from which light comes to the eye. This sensation is determined partly by the measurable luminance of the source and partly by the conditions of observation (Context), such as the state of adaptation of the eye. For example, very bright lamps at night appear dim during the day, because the eye adapts to the higher brightness of daylight.

Candela: Measure of light energy from a source at a specific standard angle and distance. Candela (cd) is a convenient measure to evaluate output of light from a lamp or light fixture in terms of both the intensity of light and the direction of travel of the light energy away from the source.

Contrast: Calculated evaluation of high, medium and low contrast of visible light sources or surfaces within the Property by a ratio of luminance. Contrast is the ratio of one surface luminance to a second surface luminance or to the field of view. Contrast exceeding 30 to 1 are usually deemed uncomfortable; 10 to 1 are clearly visible; and less than 3 to 1 appear to be equal.

Fully Shielded: A lighting fixture constructed in such a manner that all light emitted by the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the Luminaire, is projected below the horizontal as determined by photometric test or certified by the manufacturer. Any structural part of the light fixture providing this shielding must be permanently affixed. In other words, no light shines above the horizontal from any part of the fixture.

Glare: Glare is visual discomfort experienced from high luminance or high range of luminance. For exterior environments at night, glare occurs when the range of luminance in a visual field is too large. The light energy incident at a point is measured by a scale of footcandles or lux, and is described in the technical term Illuminance. This incident light is not visible to the eye until it is reflected from a surface, such as pavement, wall, dust in the atmosphere or the surface of a light bulb. The visible brightness of a surface is measured in footlamberts (or metric equivalent candelas per square meter) and is described by the term Luminance.

The human eye processes brightness variations across a very broad spectrum of intensities. The range of brightness generated by direct noon sun versus a moonlight evening is over 5000 to 1. Human eyes are capable of accommodating to this range of intensities given adequate time to adjust. However, the eye cannot process brightness ratios of more than 30 to 1 within a view without discomfort. See IESNA 10th Edition Handbook, Section 4.10.1, Discomfort Glare and Section 10.9.2 Calculating Glare.

For the purpose of this analysis, brightness of light sources may be described subjectively by the following criteria:

High Contrast Conditions: View of light fixture emitting surface, such as a lens, reflector, or lamp, where brightness contrast ratio exceeds 30 to 1 (source Luminance to background Luminance ratio in footlamberts).

Medium Contrast Conditions: Brightly lighted surfaces where contrast ratio exceeds 10 to 1, but is less than 30 to 1 (lighted surface Luminance to background Luminance ratio in footlamberts).

Low Contrast Conditions: Illuminated surfaces where contrast ratios are less than 10 to 1 (source Luminance to background Luminance ratio in footlamberts).

Illuminance:

Illuminance is the means of evaluating the density of Luminous Flux. Illuminance indicates the amount of Luminous Flux from a light source falling on a given area. Illuminance is measured in footcandles (fc) which is the lumens per square foot, or Lux (lumens per square meter). Illuminance need not necessarily be related to a real surface since it may be measured at any point within a space. Illuminance is determined from the Luminous intensity of the light source. Illuminance of a point source decreases with the square of the distance from the light source (see Inverse Square Law definition).

Horizontal Illuminance:

Illuminance incident upon a horizontal plane. The orientation of the illuminance meter or calculation point will be 180° from Nadir.

Vertical Illuminance:

Illuminance incident upon a vertical plane. The orientation of the illuminance meter or calculation point will be 90° from Nadir.

Inverse Square Law:

In physics, an inverse-square law is any physical law stating that a specified physical quantity or intensity is inversely proportional to the square of the distance from the source of that physical quantity. The fundamental cause for this relationship can be understood as geometric dilution corresponding to point-

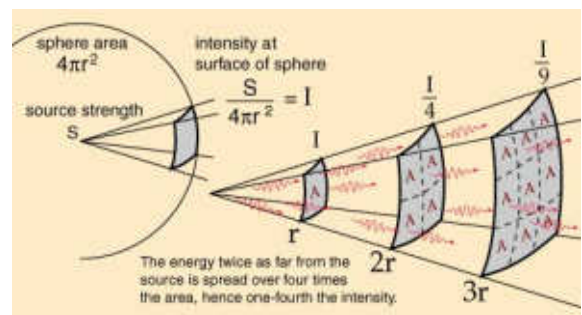


Figure 2: Inverse square law diagram (hyperphysics.phy-astr.gsu.edu)

source radiation into three-dimensional space (see Figure 2). The divergence of a vector field which is the resultant of radial inverse-square law fields with respect to one or more sources is everywhere proportional to the strength of the local sources, and hence zero outside sources. Newton's law of universal gravitation follows an inverse-square law, as do the effects of electric, magnetic, light, sound, and radiation phenomena. Thus, Illuminance decreases with the square of the distance from the light source.

Output Direction:	Luminaires for general lighting are classified in accordance with the percentages of total luminaire output emitted above and below horizontal. The light distribution curves may take many forms within the limits of upward and downward distribution, depending upon the type of light and the design of the luminaire.
Lighting Array:	An installation of multiple light sources or lamps where the distance between each lamp or light source within the Lighting Array is less than 5 feet on center in any direction from any other source.
Light Source:	Device which emits light energy from an electric power source.
Light Trespass:	Electric light from subject property incident onto adjacent properties, measured in footcandles or lux, usually analyzed by measurement at or near the adjacent property line.
Lighting Zone (LZ):	Defined by IESNA and summarized in Table 26.4 in the Handbook and adopted by CALGreen.
Lighting Zone LZ3:	Outdoor areas of human activity where the vision of human residents and users is adapted to moderately high light levels. Lighting is generally desired for safety, security and/or convenience.
Lighting Zone LZ4:	Outdoor areas of human activity where the vision of human residents and users is adapted to high light levels. Lighting is generally desired for safety, security and/or convenience.
Luminaire:	A complete lighting unit consisting of a lamp or lamps and ballast(s) (when applicable) together with the parts designed to distribute the light, to position and protect the lamps, and to connect the lamps to the power supply. Also referred to as a Light Fixture.
Luminance:	Luminance is a measure of emissive or reflected light from a specific surface in a specific direction over a standard area. Luminance is measured in footlamberts (fL) ($1/\pi$ Candela per square foot) or cd/m^2 (Candela per square meter). $1\text{fL} = 3.43 \text{ cd}/\text{m}^2$.

Whereas Illuminance indicates the amount of Luminous Flux falling on a given surface, Luminance describes the brightness of an illuminated or luminous surface. Luminance is defined as the ratio of luminous intensity of a surface (Candela) to the projected area of this surface (m^2 or ft^2).

Examples of measured Luminance include:

Daytime Luminance

Exterior White Wall: 1,700 - 2,200 cd/m^2

Concrete Sidewalk: 1,000 - 1,500 cd/m^2

Nighttime Luminance

Street Light: 1,300 - 6,500 cd/m^2

Exterior White Wall: 60 cd/m²

Block Wall, Not Illuminated: 0.3 - 0.7 cd/m²

Luminous Flux: Mean value of total Candelas produced by a light source. Luminous Flux describes the total amount of light emitted by a light source. The unit for measuring Luminous Flux is Lumen (lm).

This radiation could basically be measured or expressed in watts. This does not, however, describe the optical effect of a light source adequately, since the varying spectral sensitivity of the eye is not taken into account. To include the spectral sensitivity of the eye the Luminous Flux is measured in lumen. Radiant Flux or 1 W emitted at the peak of the spectral sensitivity (in the photopic range at 555 nanometers produces a Luminous Flux of 683 lumen). The unit of lumen does not define direction.

Sensitive Use Site: A property located near the Project Site where light from the Project may interfere with the use within the property, or may present an adverse effect to flora and fauna within the property. Sensitive Use Sites for this Study include residentially zoned properties and native habitat.

Skyglow: Skyglow is the description of luminous atmospheric background and results from both natural and human made conditions. Natural causes of skyglow include sunlight reflected from the surface of the earth and moon, sunlight illuminating the upper atmosphere, and visible illumination from other interplanetary sources. Human made causes of skyglow include electric light that is emitted directly upward into the sky (Uplight), or reflected off of the ground.

4. Review of Lighting Regulations & Reference Standards

Exterior lighting is regulated throughout California by the local municipal code and the state energy and building codes. Pertinent lighting sections are summarized and discussed for the City of West Hollywood Municipal Code, the Sunset Boulevard Specific Plan, the State of California Green Building Code (CalGreen), and the California Energy Code (CEC). Reference standards include model lighting ordinances provided by the Illuminating Engineering Society of North America (IESNA) and the International Dark Sky Organization, ASHRAE 90-75, and the U.S. Green Building Council. Various aspects of these reference standards are included in local regulations to improve the outcomes of any approved project and avoid future disputes or legal challenges to proposed lighting plans. The lighting standards summarized below balance the requirements of property owners for sufficient brightness and flexibility for the use of their property, with minimizing the off-site negative effects of light trespass and glare.

4.1 Sunset Boulevard Specific Plan

The Sunset Boulevard Specific Plan (the "Specific Plan") regulates lighting with respect to building lighting, transportation, street lighting and light trespass (i.e., the spillover of light onto adjacent light-sensitive properties) and Sign Lighting. The City also enforces the building code requirements of the West Hollywood Building Code, the California Green Building Code (CALGreen), and the California Energy Code (CEC).

The Specific Plan includes the following requirements which apply in this Study to Sign illumination within the Sunset Boulevard Off-Site Signage Policy (WEHO Policy).

- Sign luminance will be less than 6,000 candelas per meter squared (cd/m^2) during the day, and less than $300 \text{ cd}/\text{m}^2$ from 20 minutes prior to sunset until 20 minutes prior to sunrise.
- Sign luminance shall transition smoothly over no less than 20 minutes, from the daytime to the nighttime (or nighttime to daytime) maximum luminance.
- From 2:00 a.m. until sunrise no animated content or moving patterns shall be permitted
- Sign illuminance will not exceed 1.4 foot-candles at any adjacent residential zoned property.

In this Study the standards above apply to Sign lighting where Project Signs are adjacent to sensitive use properties within or at the boundary of the City of West Hollywood Specific Plan, which is generally within 250 feet of Sunset Boulevard. The distance of 250 feet is identified in the Sunset Strip Off-Site Signage Policy Initial Study / Negative Declaration, Section 3.1(d), page 252 (attached herein Appendix C), which states:

“Along Sunset Boulevard, most residential properties are set back behind the commercial properties that front onto Sunset Boulevard. The slope to the north and south of Sunset Boulevard significantly affect the visibility of signs from residential properties. ... The distance from Sunset Strip properties to adjacent residential properties varies considerably. The properties within close proximity are generally 250 feet to 300 feet away from the existing signs on Sunset Boulevard.”

Therefore, residentially zoned properties within the Specific Plan, generally within 250 feet of Sunset Boulevard, are subject to the WEHO Policy regulations and the 1.4 fc light trespass illuminance threshold applies. Properties within and at the boundary of the =Specific Plan are subject to the 1.4 fc threshold.

This Study also evaluates Sign light trespass illuminance at sensitive use properties that are not within the Specific Plan, and therefore are not directly regulated by the WEHO Policy. For those residential or sensitive use properties the regulations of CalGreen would apply as noted below.

- CEC defines all urban areas as LZ3. Therefore, Project Sign light trespass illuminance will not exceed 0.74 foot-candles at any adjacent residential zoned property outside of the Specific Plan boundary.

4.2 California Code of Regulations, Title 24

Title 24 of the California Code of Regulations (CCR), also known as the California Building Standards Code, includes regulations for building lighting throughout the State of California. The following components of Title 24 include standards related to Sign lighting:

a. 2022 California Administrative Code, Administrative Regulations for the California Energy Commission (CEC):

The California Administrative Code, which is Part 1 of Title 24, includes Section 10-114. Determination of outdoor lighting zones and administrative rules for use. This section establishes rules for implementing outdoor lighting zones, and is included herein as Appendix D.

Nighttime lighting environment are defined as Lighting Zones 1 through 4 in Table 10-114-A LIGHTING ZONE CHARACTERISTICS AND RULES FOR AMENDMENTS BY LOCAL JURISDICTIONS. The requirements of Section 10-114 are established to show compliance with Section 140.7 of Title 24, California Code of Regulations, Part 6. The description of nighttime lighting environments in Table 10-114-A are similar to IESNA Table 26.4, discussed below.

The Project Site and surrounding properties are an urban, mixed use, commercial and residential zone with extensive nighttime use, including nearby industrial, retail, restaurants, and entertainment venues. Current best

practices for lighting standards recognize the unique issues related to nighttime use adjacent to sensitive use sites. As noted above, CEC includes designations for Lighting Zones 1 through 4, included below in Appendix D, which correspond to the IESNA Outdoor Lighting Zone Definitions, Table 26.4, and Light Trespass Illuminance Limits, Table 26.5, within the IESNA 10th Edition Handbook, included herein as Appendix H and I respectively. The IESNA recommendations for light trespass Illuminance vary based upon the extent of nighttime human activity and the extent of natural habitat.

The existing conditions surrounding the Project site and along Sunset Boulevard are consistent with the definition of Lighting Zone 4 noted above. In addition, the IESNA defines Lighting Zone 4 as:

“areas of human activity where the vision of human residents and users is adapted to high light levels. Lighting is generally considered necessary for safety, security and/or convenience and it is mostly uniform or continuous.”

IESNA Table 26.5, lists a Pre-curfew 15 Lux (1.4 footcandles) maximum at the location where trespass is under review for Zone 4. As noted above, the City of West Hollywood Ordinance has incorporated the requirements of Lighting Zone 4, 1.4 fc maximum light trespass illuminance, for all residential properties in the vicinity of Sunset Boulevard. Therefore, this Study utilizes the WEHO Policy maximum Sign light trespass illuminance of 1.4 fc at sensitive use properties adjacent to Sunset Boulevard.

Per the CEC, California Energy Efficiency Standards, Section 10-114, the designations for outdoor lighting zones in urban areas are as follows:

“The default for urban areas, as defined by the U.S. Census Bureau, is Lighting Zone 3. Local AHJs (Authorities Having Jurisdiction) may designate areas to Lighting Zone 4 for high intensity nighttime use, such as entertainment or commercial districts or areas with special security considerations requiring very high light levels.”

All urban areas within California are designated Lighting Zone LZ3 as default under the CEC. The corresponding light trespass illuminance defined by IESNA for LZ3, which limits the light trespass to 8 lux (0.74 footcandles). Therefore, all urban areas within the City of West Hollywood not included within the Specific Plan, and adjacent neighborhoods within the City of Los Angeles, and City of Beverly Hills are designated by CEC as Lighting Zone 3. The City of Los Angeles Municipal Code includes sign lighting regulations which permit sign light trespass illuminance not to exceed 3.0 fc (LAMC Chapter 1, Article 4.4, Sec. 14.4.4 E) at a residentially zoned property. Furthermore, Signs which fits the criteria of CEC section 130.3 are exempt from the CalGreen requirements under section 5.106.8, Exception 1. However, this Study utilizes the more stringent CEC designation of LZ3, 0.74 fc as the basis of the evaluation of Project Sign light trespass to present a more conservative analysis for areas not within the Specific Plan boundary.

b. California Energy Code 2022, Section 140.7, PRESCRIPTIVE REQUIREMENTS FOR OUTDOOR LIGHTING

The California Energy Code (CEC) stipulates allowable energy use for Outdoor Lighting (see Appendix E herein), including with the aim of reducing energy consumption at night through efficient and effective use of outdoor building lighting equipment. Sign lighting is exempt as per “Section 140.7 (a), Exceptions to Section 140.7(a) 7. Lighting of signs complying with the requirements of Sections 130.3 and 140.8”. Therefore, the energy requirements in CEC section 140.7 do not apply to the Project Signs.

c. California Energy Code 2022, Section 130.3, SIGN LIGHTING CONTROLS

The California Energy Code (CEC) stipulates control requirements for signs (see Appendix F herein), with the aim of reducing energy consumption at night through efficient and effective use of sign lighting equipment. The control of the Signs will comply with the control requirements listed in CEC Section 130.3..

d. California Energy Code 2022, Section 140.8, PRESCRIPTIVE REQUIREMENTS FOR SIGNS

The California Energy Code (CEC) stipulates energy and light source requirements for signs (see Appendix G herein), including requirements for “(a) Maximum allowed lighting power.”, or “(b) Alternate lighting sources.” Both sections require high efficiency light sources, LED, or equivalent. The energy requirements within CEC section 140.8 apply to the Project Sign lighting.

e. California Green Building Standards Code 2022, Section 5.106.8, LIGHT POLLUTION REDUCTION

The California Green Building Standards Code (CalGreen), which is Part 11 of the Title 24, contains limits on light leaving a project with the intent to mitigate negative effects of light pollution at nearby properties and skyglow. CalGreen Paragraph 5.106.8, Light Pollution Reduction, requires that all non-residential outdoor lighting must comply with the following requirements:

“The minimum requirements in the CEC for Lighting Zones 1–4 as defined in Chapter 10 of the California Administrative Code

and:

“Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent.”

Exceptions to CalGreen section 5.106.8 include:

“1. Luminaires that qualify as exceptions in Sections 130.2(b) and 140.7 of the California Energy Code.”

and:

“3. Building façade meeting the requirements in Table 140.7-B of the California Energy Code, Part 6”.

The Project Signs qualify as exceptions to CEC sections 130.2(b) and 140.7, and therefore are exempt from CalGreen section 5.106.8 under Exception 1. Therefore, the Project Signs are not required to comply with the light trespass requirements of CalGreen. The WEHO Policy regulates light trespass illuminance for the Project Signs at residential properties within Specific Plan boundary. Outside of the Specific Plan area, the Project Signs are analyzed against the CalGreen light trespass limits to present a conservative analysis.

4.3 California Vehicle Code, Division 11. Rules of the Road

Chapter 2, Article 3 of the California Vehicle Code stipulates limits to the location of light sources that may cause glare and impair the vision of drivers.

ARTICLE 3. Offenses Relating to Traffic Devices [21450 - 21468] (Article 3 enacted by Stats. 1959, Ch. 3.), Section 21466.5. No person shall place or maintain or display, upon or in view of any highway, any light of any color of such brilliance as to impair the vision of drivers upon the highway. A light source shall be considered vision impairing when its brilliance exceeds the values listed below.

The brightness reading of an objectionable light source shall be measured with a 1-1/2 degree photoelectric brightness meter placed at the driver’s point of view. The maximum measured brightness of the light source within 10 degrees from the driver’s normal field of view shall not be more than 1,000 times the minimum measured brightness in the driver’s field of view, except that when the minimum measured brightness in the field of view is 10 footlamberts or less, the measured brightness of the light source in footlambert shall not exceed 500 plus 100 times the angle, in degrees, between the driver’s field of view and the light source.

4.4 IESNA Recommended Practices

The Illuminating Engineering Society of North America (IESNA) recommends illumination standards for a wide range of building and development types. These recommendations are widely recognized and accepted as best practices and are therefore a consistent predictor of the type and direction of illumination for any given building type. For all areas not stipulated by the regulatory building code, municipal code or specifically defined requirements, the IESNA standards are used as the basis for establishing the amount and direction of light for the Project Signs.

The IESNA 10th Edition Lighting Handbook and subsequent publications define Outdoor Lighting Zones relative to a range of human activity versus natural habitat. Table 26.4, Nighttime Outdoor Lighting Zone Definitions, included in Appendix H of this Study, establishes the Zone designation for a range of existing lighting conditions, from low or no existing lighting to high light levels in urban areas. Table 26.4 is referenced by the CEC as noted above in relation to allowable energy use for outdoor lighting. In addition, the IESNA 10th Edition Lighting Handbook defines Recommended Light Trespass Limits in Table 26.5, included in the Appendix I hereto, relative to the Outdoor Lighting Zones. The Recommended Light Trespass Illuminance Limits describe the maximum light trespass values in Lux at the location where trespass is under review.

The existing conditions surrounding and adjacent to the Project site are best described as Lighting Zone 4 in IESNA Table 26.4. Therefore, the corresponding maximum Pre-curfew illuminance for Zone 4 identified in IESNA Table 26.5 is 15 Lux (1.4 footcandles) maximum at the location where trespass is under review.

5. Significance Threshold

Appendix C of the California Environmental Quality Act (CEQA) Guidelines (14 California Code of Regulations, Sections 15000–15387) provides a set of sample questions to evaluate impacts with regard to aesthetics, including light and glare. The question that pertains to light and glare is as follows:

Would the project:

Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

In the context of this question from Appendix C of the CEQA Guidelines, the determination of significance in this Study takes into account the following factors:

The change in ambient nighttime levels as a result of project sources; and

The extent to which project lighting would spill off the Property and affect adjacent residential zoned properties.

Specifically, the Project would create a significant impact with regard to artificial light or glare if:

Project Sign light trespass illuminance is greater than 1.4 fc at residential zoned property lines adjacent to Sunset Boulevard.

Project Sign light trespass illuminance is greater than 0.74 fc at residential zoned property lines beyond the Specific Plan boundary.

Or:

Project Sign lighting creates glare with new high contrast conditions, with contrast ratio greater than 30:1, visible from a field of view from a residentially zoned property.

In addition, based on the California Vehicle Code requirements identified above, the Project would create a significant impact with regard to artificial light or glare effects on drivers of motor vehicles if:

The maximum measured brightness of the light source within 10 degrees from the driver's normal field of view shall not be more than 1,000 times the minimum measured brightness in the driver's field of view, except that when the minimum measured brightness in the field of view is 10 footlamberts or less, the measured brightness of the light source in footlambert shall not exceed 500 plus 100 times the angle, in degrees, between the driver's field of view and the light source.⁴

⁴ The driver's field of view from the center of the roadway plus 10 degrees."

6. Methodology

6.1 Existing Conditions Procedures

Existing conditions lighting observations were conducted following recommended practice procedures defined by the IESNA in RP-33-00 Lighting for Outdoor Environments, TM-10-00 Addressing Obtrusive Light (Urban Sky Glow and Light trespass) in Conjunction with Roadway Lighting, and TM-11-00 Light Trespass: Research, Results and Recommendations.

Field illuminance and luminance measurements were conducted to accurately document all existing incident and visible light at each Monitoring Site location. Incident light can be understood as a vector of luminous flux moving through space. As the vector (light) is incident upon a surface, the intensity of the resulting illuminance will vary depending upon the relative orientation of the vector to the surface. The greatest illuminance will result when the surface and vector are perpendicular. The least illuminance will result when the surface and vector are parallel. In the field conditions, where there are multiple sources of light originating from varied positions, illuminance measurements are recorded horizontally



Figure 3: Minolta LS-100 meter

with the photosensor facing up at 3 feet above grade, and vertically with the photosensor facing the Project as per as per IESNA standards. These measurements document the total horizontal illuminance received at a Monitoring Site as well as the direction and intensity of light converging on the Monitoring Site from the direction of the Property. Since most of the Monitoring Sites are located at a long distance away from the Property, greater than 100 feet as noted in Section 7 below, the vertical illuminance represents a plane perpendicular to the light sources. Under these conditions, there is little difference between the vertical and perpendicular plane, and the vertical plane analysis that is conducted in this Study would be equal to or greater than the measured luminance from a precisely perpendicular plane analysis. Therefore, this study utilizes a vertical and horizontal illuminance analysis. The existing Illuminance is measured with a Minolta Illuminance meter.

The existing luminance is measured from a Monitoring Site to light sources and surfaces within the field of view toward the Project from that Monitoring Site. The existing conditions luminance data is measured with a Minolta LS-100 Luminance meter with procedures consistent with best practices for field measurement of luminance as per IESNA standards. The LS-100 meter utilized by Francis Krahe & Associates, Inc. reports luminance data in either candelas per square meter (cd/m^2) or footlamberts (fL). All existing luminance data measured and reported in this Study are recorded as cd/m^2 .

6.2 Project Analysis

The analysis of the Project includes evaluation of the light trespass illuminance from the Project at adjacent sensitive use properties, and an evaluation of glare from the Project visible at sensitive use properties or at adjacent roadway locations.

This Study presents a conservative analysis with respect to light trespass and glare. The Project Sign lighting is evaluated with all Signs operating simultaneously at the maximum daytime or nighttime brightness permitted within the limits of the WEHO Policy.

a. Project Light Trespass Analysis

Light trespass illuminance is evaluated with respect to vertical illuminance at the locations where lighting is under review through the illumination modeling software program AGI32. This software utilizes the Project three-dimensional architectural computer model and the building exterior materials to generate an accurate prediction of future Project illuminance from the Project Signs identified within the Concept Design Documents (Appendix A). The calculated illuminance data is presented at 10 feet on center within a vertical planar surface. The calculation plane simulates the illumination (fc) captured by light meters.

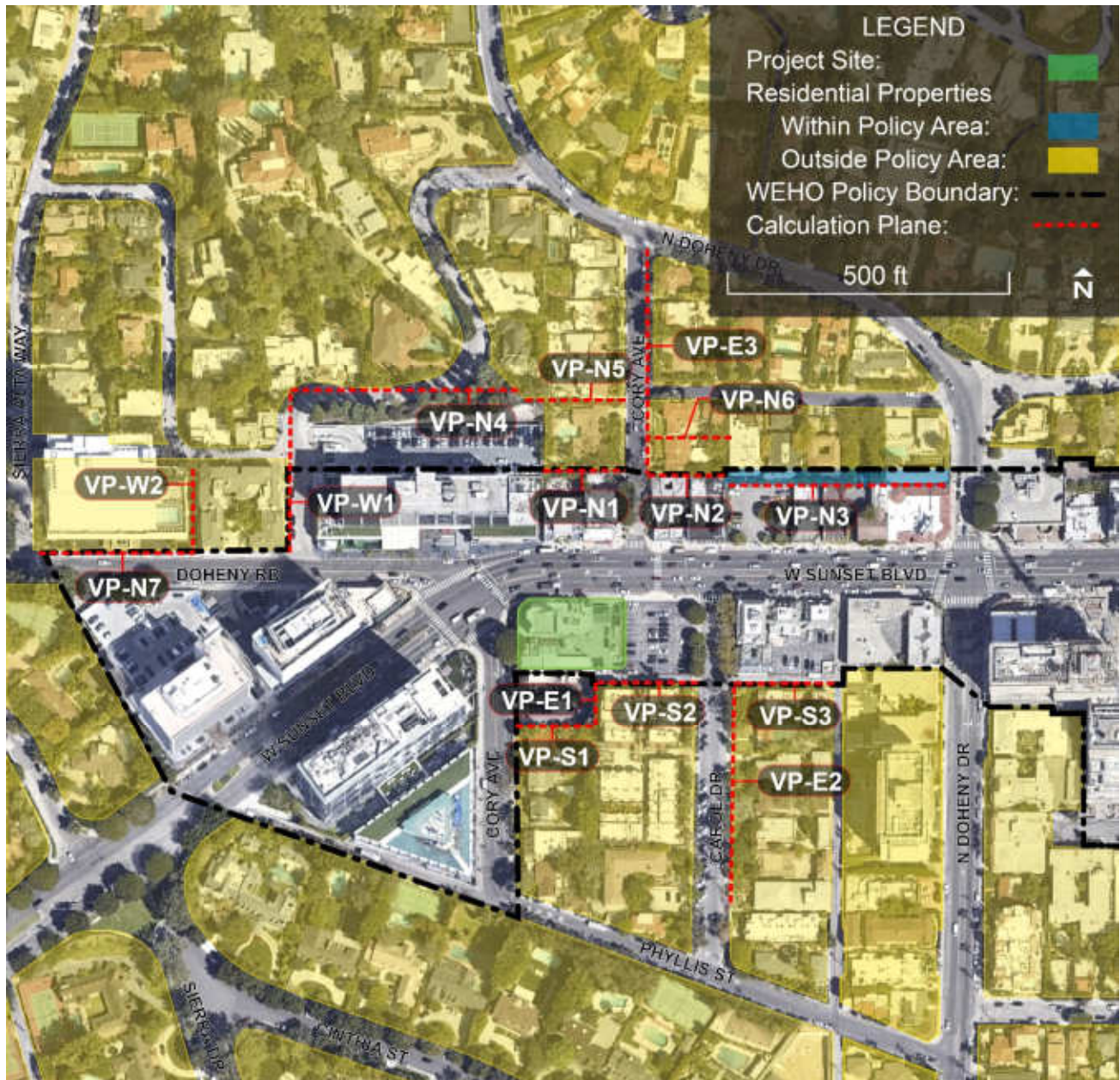


Figure 4: Sign Lighting Vertical Calculations Planes

Light trespass illuminance from the Project Signs is evaluated in this Study at the nearest residentially zoned properties to the north, south, east, and west. Vertical calculation planes for the Sign light trespass analysis are presented in Figure 4. The locations for analysis correspond to the nearby residentially zoned properties, as illustrated. Light trespass illuminance is evaluated within vertical planes at each adjacent property line location extending from grade to above the maximum height of the residential building where the Sign light trespass is under review.

The vertical calculation planes analyze the lighting at locations at or nearest to the Project property line, which will be greater than the illuminance at any location more distant from the Project. Incident light (fc) from a source degrades in proportion to the inverse square of the distance from the source to the location where lighting is under review. The illuminance E_v (fc) incident at any given distance D (ft) from an illuminated surface S (ft²) with uniform surface luminance of L (cd/m²) is calculated by the following formula:

$$E_v = \frac{L \times S}{10.76 \times D^2}$$

This formula illustrates the reduction in illuminance at any location as the distance increases from a light source. Locations more distant from the Project site than the locations analyzed will receive less light from the Project due to the increased distance. Therefore, the Project will produce a less significant light trespass impact on residential properties or other sensitive sites more distant from the review locations identified in Figure 4 above.

b. Project Glare Analysis

Glare from the Project is evaluated at adjacent residentially zoned properties and for drivers on adjacent roadways. Project Sign luminance is evaluated by the contrast ratio, which equals the maximum Project luminance divided by the measured average existing luminance within the field of view as measured at the Monitoring Sites identified in the field survey of existing conditions (see Section 7 below). Contrast ratios greater than 30:1 are considered potential glare conditions.

Luminance is independent of distance for large area sources, such as illuminated signs, where the viewing locations are relatively close to the sign and the sign fills a large portion of the field of view. At viewing locations less than 19 times the height or width of the illuminated surface, the sampled area viewed or measured by a luminance meter increases with distance, cancelling the inverse square losses. The standard meter for luminance measurement utilizes a 3 degree lens, thus the 3 degree view translates to approximately 19.1 times the height or width dimension. At viewing locations beyond 19 times the height or width the illuminated surface becomes a point source, and the inverse square relationship will again predict the measured luminance or perceived brightness. The Project includes Signs as defined in Appendix A. The luminance of the Project Signs is analyzed with a constant luminance of 300 cd/m² at night.

The potential roadway glare impacts are analyzed with respect to the Project luminance compliance with the California Vehicle Code requirements for both night and day conditions. According to California Vehicle Code Section 21466.5, the Project would have a significant impact with regard to artificial light or glare if:

The maximum measured brightness of a light source within 10 degrees from a driver's normal line of sight exceeds 1,000 times the minimum measured brightness in the driver's field of view, except when the minimum values are less than 10 footlamberts (fL).

Or:

At minimum luminance less than 10 footlamberts (fL) the source brightness exceeds 500 fL plus 100 times the angle, in degrees, between the driver's line of sight and the light source.

c. Review of Nearby Existing and Proposed Signs

The Study includes a review of light which may be generated by nearby existing and proposed future signs which are part of the Arts and Advertising program, relative to the light generated from the Project Sign. This review is included to predict where lighting from the Project Sign and adjacent signs may overlap. All sign lighting regulations apply to each sign individually and are not collectively regulated.

To determine the locations where light from the Project Sign and nearby signs may overlap, the maximum distance from each sign where the light from the sign degrades to 1.4 fc or less is calculated and then illustrated on a plan view diagram. The locations where these plan diagrams overlap indicates an area where the light from the Project Sign may increase the ambient illumination in conjunction with an adjacent sign. The calculation of the distance from the signs where light from the sign degrades to 1.4 fc or less is based upon a very conservative method, that assumes equivalent radial intensity from the Signs. In fact, the signs do not operate in this manner. However, this calculation presents a conservative evaluation of the extent of the sign lighting intensity.

The maximum extent of light spread of each sign is calculated using the Inverse Square Law. Incident light (fc) from a source degrades in proportion to the inverse square of the distance from the source to the location where lighting is under review. The illuminance E_v (fc) incident at any given distance D (ft) from an illuminated surface S (ft²) with uniform surface luminance of L (cd/m²) is calculated by the following formula:

$$E_v = \frac{L \times S}{10.76 \times D^2}$$

This formula illustrates the reduction in illuminance at any location as the distance increases from a source surface. Therefore, this formula may be used to determine the distance (D) where light from the sign will degrade to 1.4 fc.

$$D = \text{square root} \frac{L \times S}{E_v \times 10.76}$$

The above formula is used to calculate the distance where illuminance reaches 1.4 fc for each sign for at the maximum luminance and sign area. This distance is then used in the figures presented in Section 8.3 below to diagram the maximum extent of light from the Signs to evaluate potential locations where two or more signs are illuminating a particular sensitive use location.

7. Project Existing Conditions

This Lighting Study by Francis Krahe & Associate Inc. (Study) analyzes proposed lighting associated with the Sunset Jewel Box (Project) located at 9176 Sunset Boulevard in the City of West Hollywood, California. The existing lighting conditions within and surrounding the Project include city streetlights, exterior parking lot lights, exterior lighting utilized for security and safety, commercial illuminated signs, and landscape lighting at adjacent residences.

The distance from the Project to adjacent residential properties varies considerably. Residential properties exist to the north, south, east, and west. The closest existing residential property to the Project site is located approximately 104 feet to the southeast of the Project at 1031 Carol Street.

7.1 Existing Conditions Monitoring Sites

Monitoring sites are utilized to describe and evaluate the existing lighting conditions at and surrounding the Project to determine the maximum potential impacts that may result from light or glare onto adjacent sensitive sites surrounding the Project site. All Monitoring Site locations are within close proximity of the Project and have views of the Property. Monitoring Sites may also be considered existing residentially zoned properties, or may be located adjacent to existing residential properties.

The following criteria are used to select potential Monitoring Site locations:

Project Light Visibility – Monitoring sites are analyzed that provide direct view of the areas of greatest light intensity from the Project.

Proximity – Monitoring sites at the least distance to the Project are analyzed. These locations are selected because light intensity decreases exponentially with distance. Locations at a greater distance will experience less light intensity than nearby locations.

Figure 5 shows the Project's location, the Monitoring Site locations and the properties surrounding the Project. The Project site is shaded green. Monitoring Site locations were selected for observation and field lighting measurements to evaluate the views to the Project from adjacent residential properties and to determine the extent and intensity of existing light sources within and surrounding the Project. The Monitoring Sites are within the public right of way, adjacent to residences or at the Project property line. These locations are representative of the view to the Project from the vicinity of the sensitive sites surrounding the Project to the north, south, east, and west.

Figure 5 illustrates the following Monitoring Site locations:

Monitoring Site M-E1: Monitoring Site M-E1 is located adjacent to 1033 Carol Drive at the west side of the Carol Street right of way, to evaluate the Project east elevation and east facing Signs. The distance to the Project property line is approximately 104 feet.

Monitoring Site M-N1: Monitoring Site M-N1 is located within the public right of way, adjacent to the west property line of 1112 Cory Ave., to evaluate the Project north elevation and north facing Signs. The distance to the Project property line is approximately 215 feet.



Figure 5: Monitoring Sites

Monitoring Site M-N2: Monitoring Site M-N2 is located within the public right of way, adjacent to 1245 North Doheny Drive, to evaluate the Project north elevation and north facing Signs. The distance to the Project property line is approximately 930 feet. The Project Signs may be visible from M-N2 due to the increased street elevation relative to the Project site and the elevation of buildings and trees between the Project site and M-N2. Properties to the south of M-N2 along Doheny Drive are at lower elevation relative to the Project Sign and the view from Doheny Drive to the Project Site is obscured by trees and buildings fronting on Sunset Boulevard.

Monitoring Site M-W1: Monitoring Site M-W1 is located adjacent to the east property line of 9233 Doheny Road, at the west sidewalk of Sunset Hills Road, to evaluate the Project west elevation

and west facing Signs. The distance to the Project property line is approximately 375 feet.

Monitoring Site M-W2: Monitoring Site M-W2 is located within the public right of way adjacent to the east property line of 9255 Doheny Road, at the east corner of Sierra Tower, to evaluate the Project west elevation and west facing Signs. The distance to the Project property line is approximately 524 feet.

Monitoring Site M-S1: Monitoring Site M-S1 is located within the public right of way adjacent to the north property line of 1024 Corey Ave., to the south of the Project site, to evaluate the Project south elevations and south facing Signs. The distance to the Project property line is approximately 105 feet. The Signs may be visible on the west elevation of the Project.

7.2 Criteria

As established in Section 1.3, the following factors were used to assess the existing conditions at each Monitoring Site:

Table 1. Existing Conditions Lighting Criteria

Criteria	Metric	Procedure
Light trespass - Illuminance	Measured illuminance (footcandle) documented at each Monitoring Site	Measured illuminance recorded each Monitoring Site with Minolta illuminance meter.
Glare – Contrast Ratio	Measured luminance candelas per meter squared, documented at each Monitoring Site Observed existing conditions	Measured luminance recorded at each Monitoring Site with Minolta luminance meter. Day and night photograph to record the evaluation of the view to the Project Site from the Monitoring Site in terms of Project visibility and prominent light sources, lighted surfaces, and illuminated signs.

7.3 Monitoring Site Survey Data

The observations and measurement of existing lighting conditions within and surrounding the Property are summarized below in relation to the evaluation factors established in Section 5, Significance Threshold:

Illuminance: The Illuminance listed in Table 2, below, summarize the measured illuminance at the Monitoring Sites. The measured illuminance is consistent with an urban lighting condition, with relatively high illuminance at the street and sidewalk within the public right of way and nearby commercial properties, and lower illuminance within the residential properties, but sufficient light for safety and security. The existing Property includes lighting for the existing parking lot and signs. Adjacent commercial properties to the south, east, and west contribute to a relatively bright night environment.

Measured illuminance greater than 1.4 fc is evaluated as high illuminance, from 0.75 fc to 1.4 fc is evaluated as medium illuminance, and from 0.74 fc or less as low illuminance.

The highest existing horizontal illuminance level was recorded at Monitoring Site at M-W1 with 1.81 fc, while the lowest horizontal illuminance was recorded at Monitoring Site M-S1 at 0.20 fc. The highest existing vertical illuminance level was recorded at Monitoring Site M-W2 at 1.00 fc, while the lowest vertical illuminance was recorded at Monitoring Site M-N2 at 0.08 fc.

Table 2. Measured Illuminance (fc) at Monitoring Sites

Monitoring Site	Illuminance (fc)		Location	Evaluation
	Horizontal	Vertical		
M-E1	0.69	0.90	1033 Carol Drive	Low Horizontal, Medium Vertical illuminance
M-N1	0.48	0.50	1112 Cory Avenue	Low Horizontal, Low Vertical illuminance
M-N2	0.22	0.08	1245 North Doheny Drive	Low Horizontal, Low Vertical illuminance
M-W1	1.81	0.40	9233 Doheny Road	High Horizontal, Low Vertical illuminance
M-W2	1.70	1.00	9255 Doheny Road	High Horizontal, Medium Vertical illuminance
M-S1	0.20	0.29	1024 Corey Avenue	Low Horizontal, Low Vertical illuminance

Contrast/Glare: The visual evaluation of High, Medium, and Low Contrast describes the perception of how bright a visible object appears to the surrounding objects within any given field of view and context. High Contrast indicates a potential glare condition for residential properties nearby.

Contrast is the ratio of one surface luminance to a second surface luminance or to the field of view. Contrast exceeding 30 to 1 is usually deemed uncomfortable and is evaluated as high; contrast less than 30 to 1 but greater than 10 to 1 is evaluated as medium contrast; contrast 10 to 1 or less is evaluated as low.

The measured luminance recorded at the Monitoring Sites within the view to the Project includes prominent, high brightness light sources and illuminated surfaces, such as streetlights, illuminated signs, and flood lighted buildings, as well as lower brightness surfaces such as sidewalks, parking lots, and un-illuminated walls or landscape areas. The existing Project site is a commercial site with parking lot light poles and existing exterior lights. The site is well illuminated with many bright surfaces visible. The range of recorded luminance is summarized in Table 3.

For this Study the following luminance criteria are applied to measured and calculated luminance: Luminance below 10 cd/m² is evaluated as Low luminance; Luminance greater than 10 cd/m² and less than 300 cd/m² is evaluated as medium luminance; Luminance greater than 300 cd/m² is evaluated as high luminance.

The highest average luminance was recorded at Monitoring Site M-E1 at 594 cd/m², while the lowest average luminance was measured at Monitoring Site M-W1 at 60.5 cd/m². The measured average luminance is High Luminance (greater than 300 cd/m²) at Monitoring Site M-E1. All other monitoring sites average luminance is evaluated as Medium Luminance (greater than 10 cd/m² and less than 300 cd/m²).

The highest maximum luminance was recorded at Monitoring Site M-E1 with 5790 cd/m², while the lowest maximum luminance was measured at Monitoring Site M-S1 at 758.3 cd/m². The measured maximum luminance is High Luminance (greater than 300 cd/m²) at all six monitoring sites.

The calculated contrast ratio (maximum luminance / average luminance) varies from a minimum of 6.5 to 1 at Monitoring Site M-S1 to a maximum of 20.7 to 1 at Monitoring Site M-W1. The calculated existing contrast ratio at Monitoring Site M-E1 and M-S1 are Low contrast (less than 10 to 1). The existing contrast ratio at Monitoring Sites M-N1, M-N2, M-W1, and M-W2 are Medium contrast (less than 30 to 1 and greater than 10 to 1).

Table 3: Measured Luminance (cd/m²) at Monitoring Sites

Monitoring Site	Luminance (cd/m ²)		Contrast Ratio (Max / Average)	Location	Evaluation
	Average	Maximum			
M-E1	594	5790	9.7 : 1	1033 Carol Drive	High average luminance, High maximum luminance, low contrast
M-N1	137	1671	12.2 : 1	1112 Cory Avenue	Medium average luminance, high maximum luminance, medium contrast
M-N2	255	4031	15.8 : 1	1245 North Doheny Drive	Medium average luminance, high maximum luminance, medium contrast
M-W1	60.5	1249	20.7 : 1	9233 Doheny Road	Medium average luminance, high maximum luminance, medium contrast
M-W2	240	4762	19.8 : 1	9255 Doheny Road	Medium average luminance, high maximum luminance, medium contrast
M-S1	116	758	6.5 : 1	1024 Corey Avenue	Medium average luminance, high maximum luminance, low contrast

a. Monitoring Site M-E1:

Monitoring Site M-E1 is located adjacent to 1033 Carol Drive at the west side of the Carol Street right of way, to evaluate the Project east elevation and east facing Signs. The distance to the Project property line is approximately 104 feet.



Figure 6: M-E1 September 19, 2024, 4:02 pm.

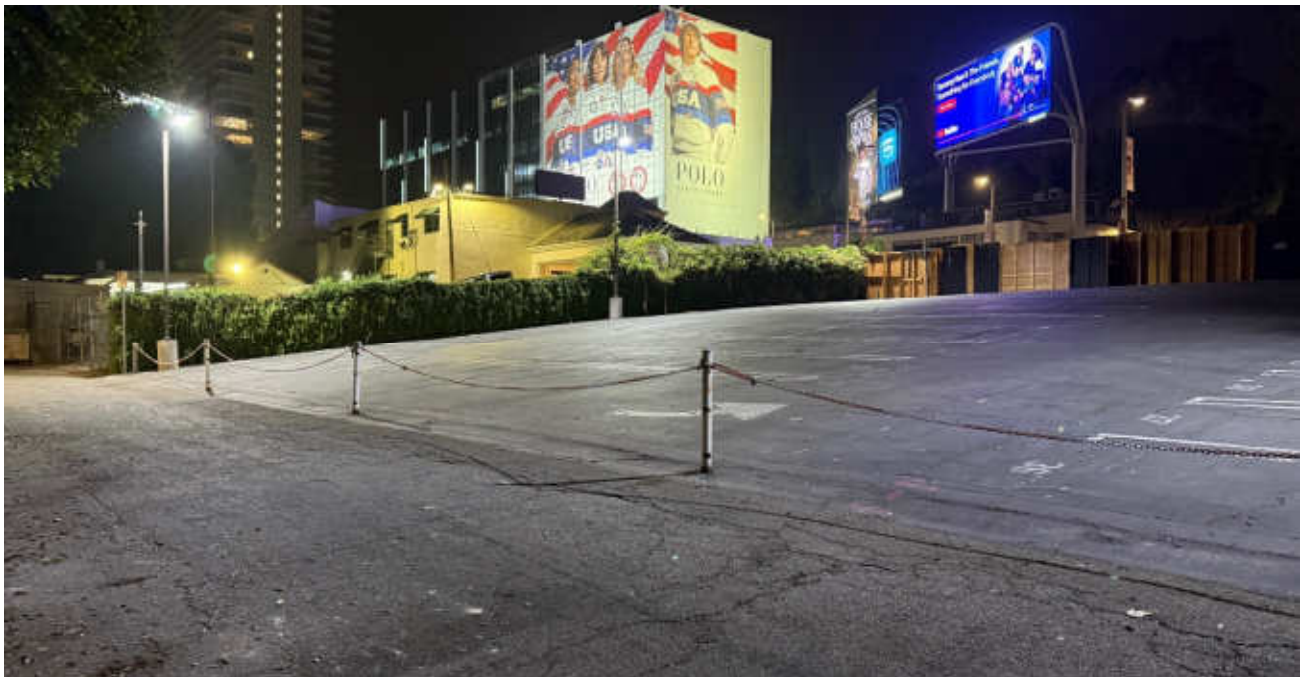


Figure 7: M-E1 September 23, 2024, 8:36 pm.

b. Monitoring Site M-N1:

Monitoring Site M-N1 is located within the public right of way, adjacent to the west property line of 1112 Cory Ave., to evaluate the Project north elevation and north facing Signs. The distance to the Project property line is approximately 215 feet.



Figure 8: M-N1 September 19, 2024, 4:03 pm.

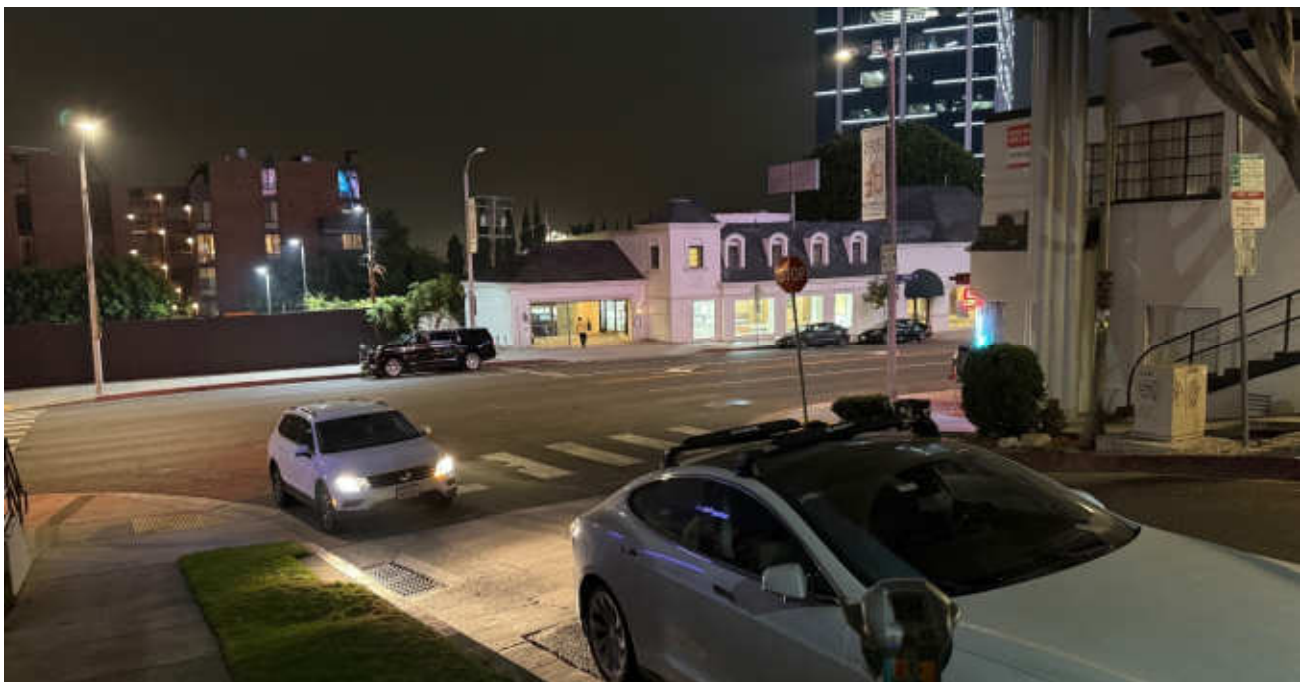


Figure 9: M-N1 September 23, 2024, 8:47 pm.

c. Monitoring Site M-N2:

Monitoring Site M-N2 is located within the public right of way, adjacent to 1245 North Doheny Drive, to evaluate the Project north elevation and north facing Signs. The distance to the Project property line is approximately 930 feet. The Project Sign Lighting may be visible from M-N2 due to the increased street elevation relative to the Project Site and the elevation of buildings and trees between the Project site and M-N2. Properties to the south of M-N2 along Doheny Drive are at lower elevation relative to the Project Sign and the view from Doheny Drive to the Project Site is obscured by trees and buildings fronting on Sunset Boulevard.



Figure 10: M-N2 February 3, 2021, 11:50 am.



Figure 11: M-N2 February 15, 2021, 9:09 pm.

d. Monitoring Site M-W1:

Monitoring Site M-W1 is located adjacent to the east property line of 9233 Doheny Road, at the west sidewalk of Sunset Hills Road, to evaluate the Project west elevation and west facing Signs. The distance to the Project property line is approximately 375 feet.



Figure 12: M-W1 September 19, 2024, 3:58 pm.

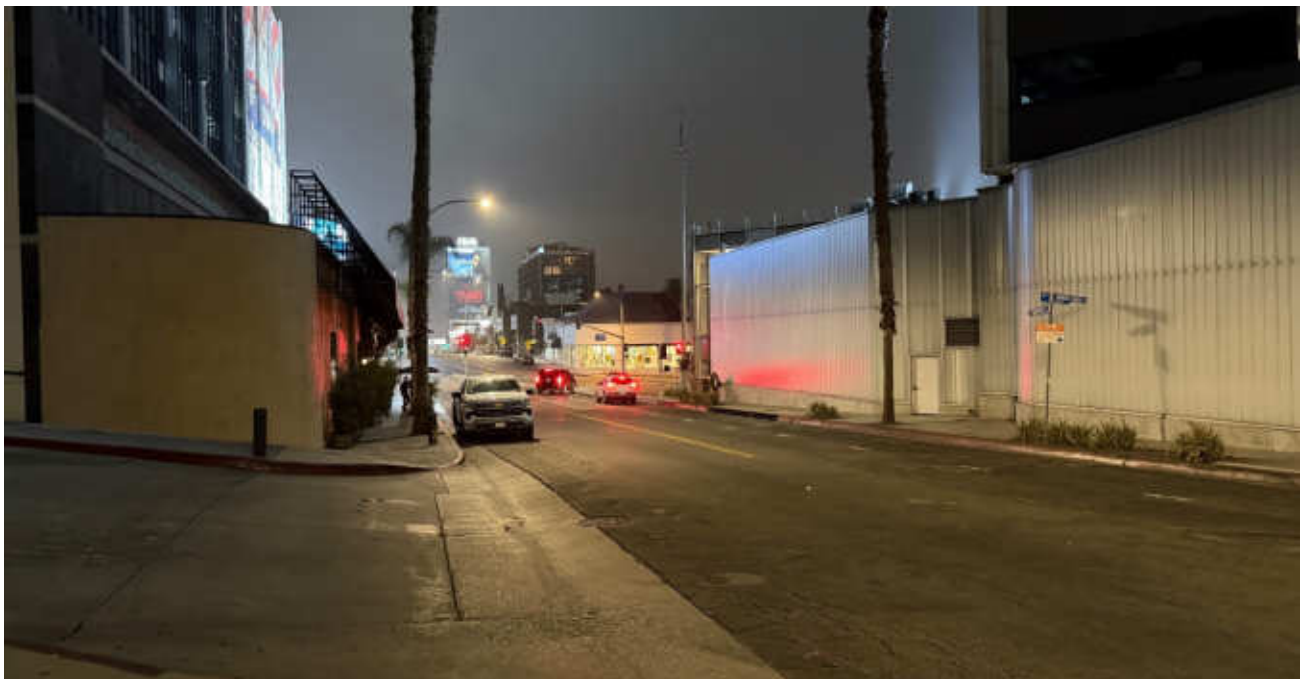


Figure 13: M-W1 September 23, 2024, 8:59 pm.

e. Monitoring Site M-W2:

Monitoring Site M-W2 is located within the public right of way adjacent to the east property line of 9255 Doheny Road, at the east corner of Sierra Tower, to evaluate the Project west elevation and west facing Signs. The distance to the Project property line is approximately 524 feet.



Figure 14: M-W2 September 19, 2024, 3:59 pm.

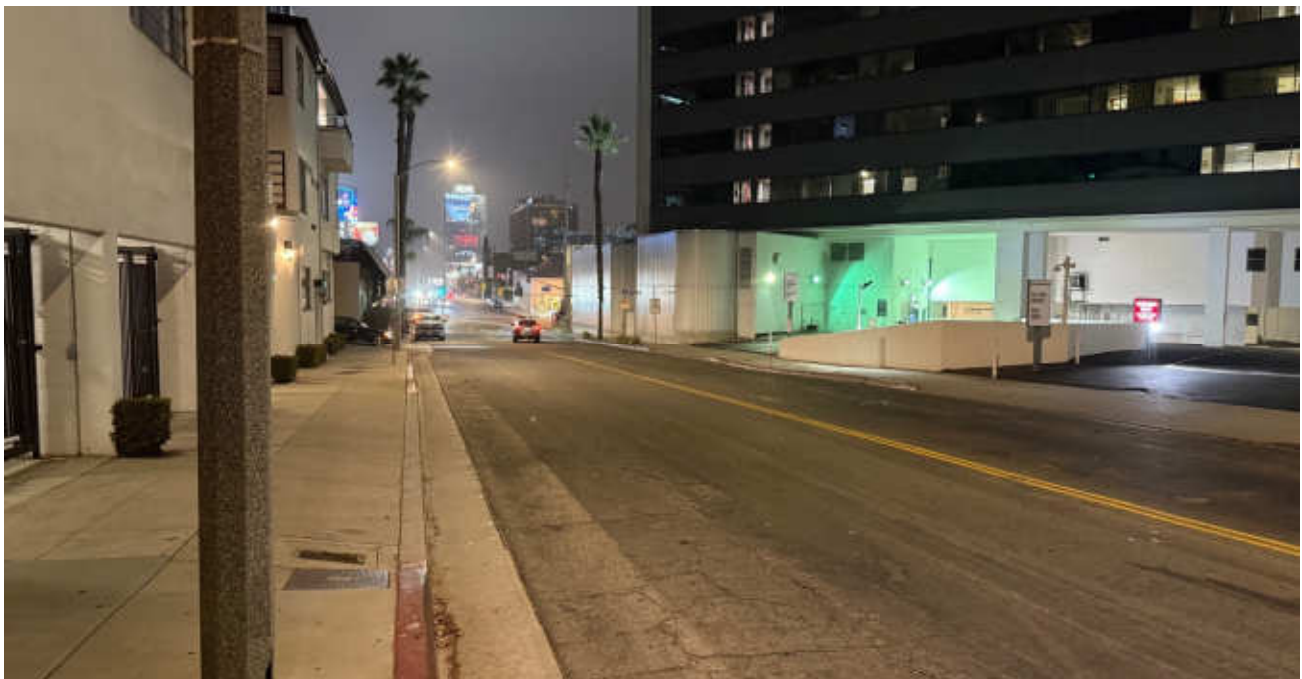


Figure 15: M-W2 September 23, 2024, 9:06 pm.

f. Monitoring Site M-S1:

Monitoring Site M-S1 is located within the public right of way adjacent to the north property line of 1024 Corey Ave., to the south of the Project site, to evaluate the Project south elevations and south facing Signs. The distance to the Project property line is approximately 105 feet. There may be an obstructed view of the Signs located on the west elevation of the Project.



Figure 16: M-S1 September 19, 2024, 4:07 pm.



Figure 17: M-S1 September 23, 2024, 9:17 pm.

8. The Project Analysis

The Project would introduce a new Signs as described in Section 2 and depicted in Appendix A.

The following criteria are used to evaluate the Project impacts from the Project Signs with respect to light trespass:

- Project Signs light trespass illuminance must be less than 1.4 fc at residential zoned property lines adjacent to Sunset Boulevard.
- The Project Signs light trespass illuminance must be less than 0.74 fc at residential zoned property lines outside of the Specific Plan boundary, and/or within the City of Los Angeles or Beverly Hills.

The following criteria are used to evaluate the Project impacts from the Project Signs with respect to glare:

- Project Signs luminance visible from residential properties must be less than high contrast conditions, less than 30 to 1 contrast ratios (Project maximum luminance to Average Measured luminance).
- Project Signs luminance visible within 10 degrees from the driver's normal field of view must be less 500 fL and or less than 1,000 times the minimum measured brightness in the driver's field of view, except that when the minimum measured brightness in the field of view is 10 footlamberts or less, the measured brightness of the light source in footlambert shall not exceed 500 plus 100 times the angle, in degrees, between the driver's field of view and the light source.

8.1 Project Light Trespass Illuminance Analysis

The Project Signs locations and dimensions are identified in detail within the Appendix A, and evaluated with all Signs operating simultaneously at maximum nighttime luminance of 300 cd/m², all white. The Project Signs will not operate in this manner in practice. However, this analysis represents a conservative evaluation of the Project Signs' potential for offsite light trespass illuminance and glare.

Specifically, the proposed Project Signs would conform to the requirements stipulated in the WEHO Policy for those properties within or abutting the Specific Plan, and by CalGreen for properties beyond the boundary of the Specific Plan, and evaluated under the performance requirements stipulated therein.

a. Light Trespass Illuminance Analysis

The Project Signs light trespass analysis evaluates the illuminance (fc) from the Project Signs leaving the Project site toward adjacent residentially zoned or other sensitive use properties. The Project Signs include the Signs as defined in and as illustrated in the Concept Design Documents in Appendix A. Tables 4 and 5 summarize the Signs light trespass illuminance calculation data at the vertical plane locations illustrated in Figure 4, which are located at the nearest residential properties. Complete calculated data is presented in Appendix J.

The Project Signs light trespass analysis evaluates the illuminance (fc) at residential properties within the Specific Plan subject to the WEHO Policy, including properties at the boundary of the Specific Plan. Vertical planes which are within or at the boundary of the Specific Plan are listed in Table 4 are analyzed relative to the WEHO Policy threshold of 1.4 fc. The Project Signs maximum calculated illuminance in Table 4 varies from a minimum of 0.00 fc at vertical plane VP-S3 to a maximum of 0.20 fc at vertical plane VP-N1 and VP-W1. All vertical calculation plane illuminance values from the Project Signs are below the 1.4 fc threshold.

Table 4: Signs Trespass Illuminance (fc) at 300 cd/m², WEHO Policy

Vertical Plane	Illuminance (fc)			Analysis (1.4 fc threshold)
	Max	Min	Avg	
VP-N1	0.20	0.00	0.17	Less than threshold
VP-N2	0.10	0.00	0.08	Less than threshold
VP-N3	0.10	0.00	0.00	Less than threshold
VP-N7	0.00	0.00	0.00	Less than threshold
VP-S2	0.10	0.00	0.04	Less than threshold
VP-S3	0.00	0.00	0.00	Less than threshold
VP-W1	0.20	0.00	0.05	Less than threshold

The Project Signs light trespass analysis evaluates the illuminance (fc) from the Project Signs leaving the Project site toward residentially zoned or other sensitive use properties beyond the boundary of the Specific Plan relative to the CalGreen threshold of 0.74 fc, which applies to all areas in the cities of West Hollywood, Los Angeles, and Beverly Hills. The Project Signs are defined and as illustrated in the Project Concept Sign Plan in Appendix A. Table 5 summarizes the Sign light trespass illuminance calculation data at the vertical planes illustrated in Figure 4 which are within the City of Los Angeles and located approximately 250 feet north of Sunset Boulevard where the CalGreen threshold applies.

Table 5: Signs Trespass Illuminance (fc) at 300 cd/m², CalGreen

Vertical Plane	Illuminance (fc)			Analysis (0.74 fc threshold)
	Max	Min	Avg	
VP-E1	0.00	0.00	0.00	Less than threshold
VP-E2	0.10	0.00	0.01	Less than threshold
VP-E3	0.10	0.00	0.01	Less than threshold
VP-N4	0.00	0.00	0.00	Less than threshold
VP-N5	0.10	0.00	0.09	Less than threshold
VP-N6	0.10	0.00	0.08	Less than threshold
VP-S1	0.20	0.00	0.03	Less than threshold
VP-W2	0.10	0.00	0.06	Less than threshold

The Project Signs maximum calculated illuminance in Table 5 varies from a minimum of 0.00 fc at vertical planes VP-E1, VP-N4, and VP-N7 to a maximum of 0.20 fc at vertical plane VP-S1. The calculated illuminance at all vertical calculation plane locations are less than the 0.74 fc threshold established by CalGreen. Figure 18 below presents a rendered view of the Project Sign illuminance calculation data. Calculation data 0.74 fc or below appears in white text while calculation data above 0.74 fc appears in red text. All calculated light trespass illuminance from the Signs are less than 0.74 fc and therefore all calculation point data appears in white text.

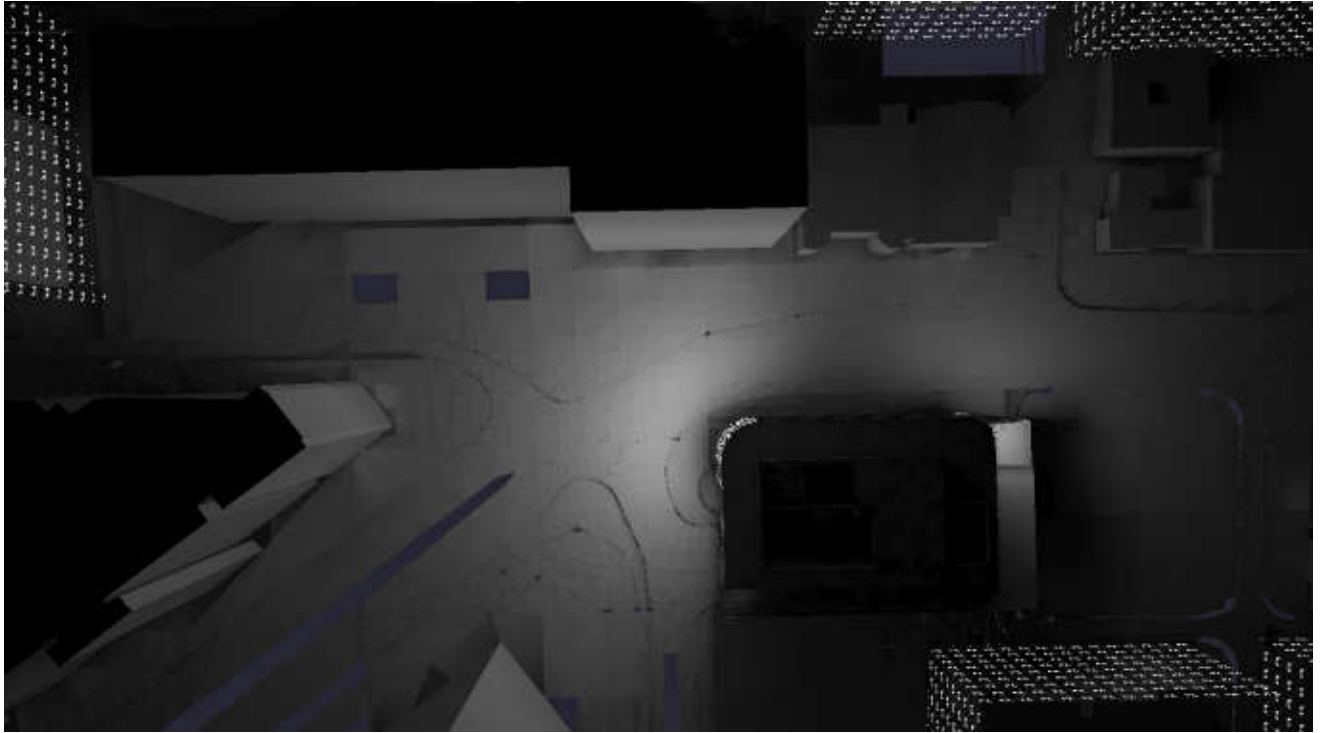


Figure 18: Sign Lighting Calculation Rendered View

8.2 Project Glare Analysis

Glare from the Project may occur when Project light sources are visible against a dark background, such as a dark sky. The Project Sign lighting may be visible from the surrounding properties to the north, south, east, and west of the Project Sites. Potential sources of glare from the Project are identified by the Contrast Ratio, which is calculated by dividing the Project maximum luminance by the average measured luminance. Contrast Ratios of 30:1 or greater indicate high contrast conditions, which may create a glare impact. Contrast Ratios less than 30:1 are considered medium contrast, and will not introduce a new source of glare. Contrast Ratios less than 10:1 are considered low contrast, and will not introduce a new source of glare. The existing average luminance is the recorded luminance measured at the Monitoring Sites as summarized in Table 3.

a. Project Signs Glare Analysis at Residential Properties

Glare from Signs occurs at residential properties when the light source is visible against a dark background, such as a dark sky. The maximum source brightness is determined by the rated source luminance. For this Study, the maximum nighttime Signs luminance is 300 cd/m². The measured existing luminance is summarized in Table 3 in Section 7 above. Table 6 summarizes the contrast ratios calculated for the Project Signs when operating at maximum nighttime luminance versus the average existing measured luminance in Table 3 at each Monitoring Site.

Table 6: Project Signs Contrast Ratio @ 300 cd/m²

Monitoring Site	Existing Measured Luminance		Project Sign Luminance		Evaluation
	Average	Maximum	Max	Contrast Ratio	
M-E1	594	5790	300	0.5 : 1	Low Contrast, no Glare
M-N1	137	1671	300	2.1 : 1	Low Contrast, no Glare
M-N2	255	4031	300	1.2 : 1	Low Contrast, no Glare
M-W1	60.5	1249	300	5.0 : 1	Low Contrast, no Glare
M-W2	240	4762	300	1.3 : 1	Low Contrast, no Glare
M-S1	116	758	300	2.6 : 1	Low Contrast, no Glare

The contrast ratio is less than 10 to 1 at all six Monitoring Site locations, which is Low Contrast and indicates no glare. All six Monitoring Sites are near the Project site and have potential direct view of the Project Signs. The Low Contrast, no glare evaluation at all six Monitoring Sites indicates the Project Signs will not present a glare condition for residential properties surrounding the Project or locations more distant from the Project than the Monitoring Sites.

b. Project Glare Analysis for Roadways

The lighting impact to driver's visibility from the Project Signs is evaluated by way of the methodology defined above at the locations where lighting is under review. As summarized below, the results of this evaluation demonstrate the light impacts resulting from the Project Signs at the locations where light is under review are below the significance threshold for excessive luminance, or glare, during night, twilight (sunrise/sunset), and day. The Project meets the California Vehicle Code (CVC) standard for roadways approaching the Project from all directions.

Night

The glare analysis of the Project Signs during night assumes the Signs lighting operating at the maximum luminance (300 cd/m^2) and compares the resulting luminance to the most stringent requirements of the CVC to determine if the Project introduces a source of distracting glare to drivers. The most stringent condition identified within the CVC Section 21466.5, states: "except that when the minimum measured brightness in the field of view is 10 footlamberts or less, the measured brightness of the light source in footlamberts (fL) shall not exceed 500 plus 100 times the angle, in roadway degrees, between the driver's field of view and the light source." Thus, a conservative evaluation, occurs where the Project Sign is visible within the centerline of the driver's field of view, the angle noted above within the field of view is 0, the surrounding surface luminance is less than 10 fL, and therefore the maximum allowable luminance is 500 fL. Therefore, the most conservative condition at night evaluates Project Signs against a threshold for luminance of a maximum 500 fL.

A measured brightness within the driver's field of view of less than 10 fL may occur at night. The Project Signs luminance is evaluated at maximum luminance of 300 cd/m^2 . Calculating the equivalent Project Signs luminance by converting to english units from metric units: 300 cd/m^2 equals 87.6 fL. The Project Signs will not exceed 87.6 fL (17.5% of the 500 fL maximum), which is less than the most conservative limit stipulated by the CVC for conditions where the minimum brightness in the driver's field of view is less than 10 fL.

When the Signs are located beyond the driver's 10 degree field of view the maximum luminance is permitted to increase under the California Vehicle Code. For example, Signs located 15 degrees from the centerline of the driver's field of view would be limited to a maximum of 1,000 fL (500 fL plus 100 times the angle (5 degrees) = 1,000 fL). All Project Signs will operate at maximum luminance of 87.6 fL at night, which is 8.8% of the maximum allowed by the CVC limit for those locations at 15 degrees from the center of the driver's field of view. Therefore, at night the Project Sign beyond the drivers 10 degree field of view will not exceed the 1000 fL threshold and will not introduce a new source of glare as defined by the CVC Section 21466.5.

Twilight

The Project is also evaluated during twilight (the transition period from day to night). Sunlight increases gradually from the minimum brightness at approximately 45 to 50 minutes before sunrise (dawn) to maximum brightness at mid-day, and then decreases gradually to the minimum brightness at 45 to 50 minutes after sunset. Therefore, the minimum ambient luminance occurs between sunset and sunrise. However, in order to analyze the most conservative, low level sunlight conditions, this analysis adjusts the time frame for the minimum ambient luminance condition of 10 fL to sunset and until 20 minutes before sunrise, extending the duration of night. At sunset the ambient sunlight will be greater than the minimum values during the night, and at 20 minutes before sunrise the luminance will also be greater than the minimum at night. At sunset, the minimum luminance values within the driver's field of view will be above the minimum nighttime values (10fL) due to the light from the setting sun. However, to maintain a conservative analysis, this evaluation assumes the minimum luminance within the driver's field of view will be less than 10 fL from sunset until 20 minutes before sunrise. Therefore, the maximum luminance threshold during this time will remain at 500 fL as noted above in the evaluation of the night threshold.

The Project will operate with a maximum Sign luminance of 300 cd/m² (87.6 fL), from sunset to 20 minutes before sunrise. At 20 minutes before sunset, the Project Signs are specified to begin transition from the maximum daytime luminance of 6,000 cd/m² to the maximum nighttime luminance of 300 cd/m². This transition must be completed no later than sunset to avoid potential high contrast, glare conditions. Similarly, the Project Signs are specified to transition from the night maximum luminance of 300 cd/m² to the day maximum luminance of 6,000 cd/m², beginning no earlier than 20 minutes before sunrise. The duration of the transition from the night maximum luminance to maximum day luminance must be completed no earlier than sunrise.

Therefore, the Project Signs will not exceed 300 cd/m² for the period beginning at sunset until sunrise. The Project luminance remains limited to the 300 cd/m² (87.6 fL) from sunset to 20 minutes before sunrise. Therefore, at sunset and until 20 minutes before sunrise, the Project will not exceed the threshold of 500 fL, and will therefore not introduce a new source of glare.

Day

The evaluation of the Project luminance during the day (sunrise until 20 minutes before sunset) compares the daytime ambient brightness to the maximum Project brightness stipulated by the CVC during full sun conditions and overcast sky conditions. Project Signs are analyzed operating at a maximum luminance of 6,000 cd/m² during the day. The CVC, Section 21466.5 above permits the Project to "generate light intensity levels greater than 1,000 times the minimum measured brightness in the driver's field of view, except when the minimum values are less than 10 (fL)."

During the day (after sunrise until 20 minutes before sunset) sunlight with clear sky conditions or light overcast conditions provides sufficient illuminance to generate surface brightness greater than 10 fL and up to 1200 fL on the least reflective surfaces, such as roadway pavement. Utilizing the value of 10 fL as the minimum within the driver's field of view, the maximum allowable brightness would be 1,000 times 10 fL, or 10,000 fL. The WEHO Policy requires that the Project Signs not exceed 6,000 cd/m² (1,750 fL) during the daytime hours of operation, and Project Signs will therefore operate at less than 17.5% of the maximum luminance stipulated by the CVC. Therefore, the Project Signs will not create a new source of glare during daytime hours of operation with clear sky or light overcast conditions.

Severe storms, heavy cloud cover, or other atmospheric conditions may occur during the day, which may cause the minimum brightness within the driver's field of view to be less than 10 fL. The Project Signs includes an electronic control system to reduce the Sign luminance from 6,000 cd/m² (1,750 fL) to 300 cd/m² (87.6 fL) maximum when the ambient sun light falls to illuminance values similar to night, less than 100 fc. During the day, when storms, cloud cover, or other low ambient sunlight conditions occur and when the ambient sunlight is less than 100 fc, the Project Signs will transition from the daytime maximum luminance of 6,000 cd/m² (1,750 fL) to 300 cd/m² (87.6 fL), and thereby ensure that the Sign brightness remains less than the maximum brightness stipulated by the CVC. Therefore, the Project will not create a new source of glare during daytime periods with storm or severe overcast weather conditions.

The Project Signs are designed to not exceed 300 cd/m² (87.6 fL) luminance at night, twilight, or during overcast sky conditions and will not exceed 6,000 cd/m² (1,750 fL) during the day. The Project Sign luminance is less than the California Vehicle Code standard, including 17.5% of the maximum allowable luminance identified as the threshold for glare during the day. Therefore, the Project Signs will not create a new source of glare to drivers on adjacent roadways.

8.3 Review of Nearby Existing and Proposed Signs

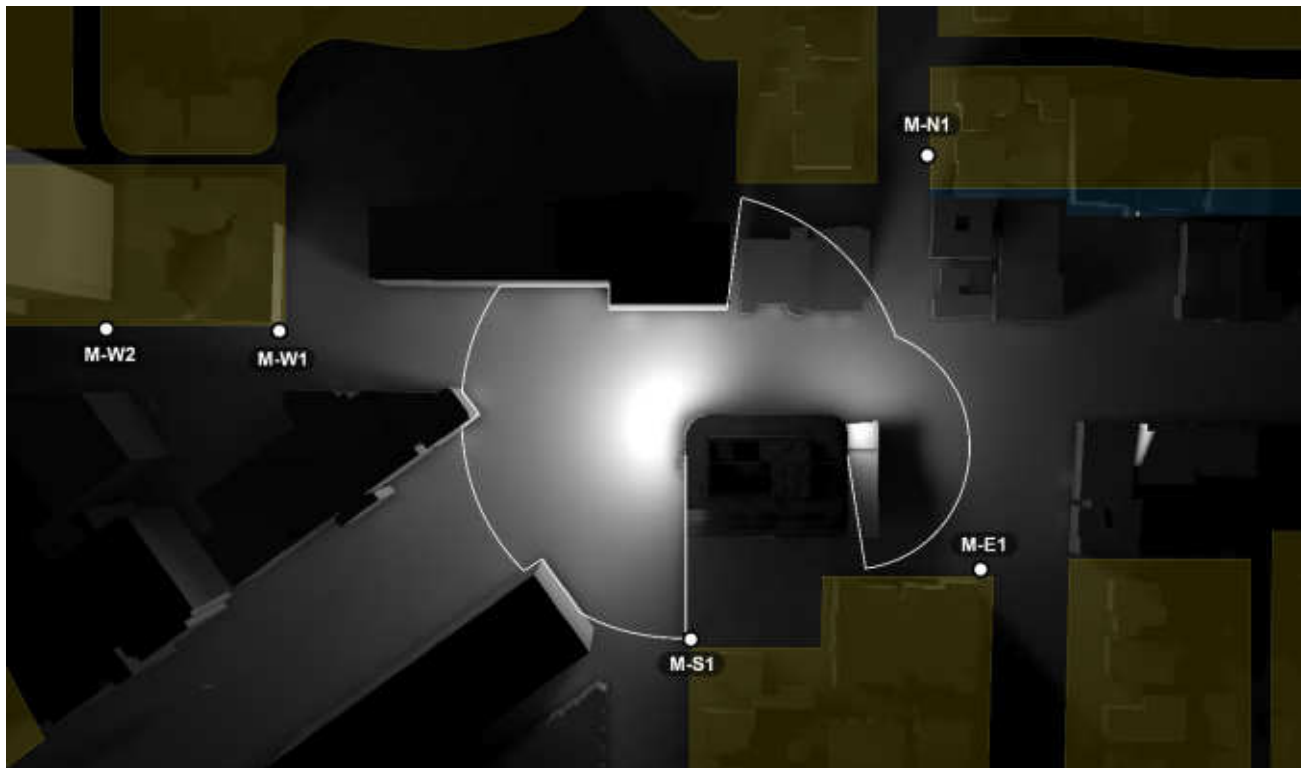
There are existing and proposed illuminated static and digital billboards associated with the Arts and Advertising Program in the vicinity of the Project which may contribute light to areas adjacent to the Project Site. This Study reviews the lighting from the Project in conjunction with two existing signs and two approved

and not yet constructed signs, all within 500 feet of the Project. The existing signs are located at 9169 Sunset Boulevard and 9157 Sunset Boulevard. The proposed signs are located at 9229 Sunset Boulevard and 9200 Sunset Boulevard. Although the nearby signs are reviewed in conjunction with the Project Sign, light trespass from signs is regulated individually. The Sign's compliance with the applicable thresholds discussed in Section 5 above confirm that light trespass impacts would be less than significant. This review of nearby signs diagrams the maximum extent which the Project Sign may add light to the surrounding areas and overlays the extent of light from the nearby signs to determine where light from the Project Sign and nearby signs may overlap. The maximum distance at which the Sign may create light trespass values exceed 1.4 fc is calculated by applying the inverse square law, as described in the methodology described in Section 6.2.c above.

The largest sign area occurs on west elevation of the building, with a projected area of approximately 1,764 square feet. Utilizing the west facing signage area, the calculation yields a distance of 187 feet to 1.4 fc. The Project's east facing sign is smaller at 500 square feet, which yields a distance of 100 feet to 1.4 fc. The calculation of the distance from the signs where light from the sign degrades to 1.4 fc is based upon a very conservative analysis, that assumes equivalent radial intensity from the Signs. In fact the signs do not operate in this manner. However, this calculation presents a conservative evaluation of the extent of the sign lighting intensity to illustrate where the light from the signs may overlap.

Figure 19 below graphically indicates the maximum distance where light from the Project equals 1.4 fc, which is illustrated as a white line. While the white line extends into residential properties, the light trespass calculated in Section 8.1 above is well below 1.4 fc at all residential properties, due to Sign size, shape, and orientation. All locations farther outside of the white line illustrated in the diagrams will receive less than 1.4 fc.

Figure 19: Project Illuminance at 1.4 fc Rendered View



Figures 20 through 23 illustrate similar light patterns from each of the four adjacent signs, two existing and two proposed, in conjunction with the Project Sign. The extent of the area within the blue line indicates the maximum distance from the existing or proposed signs to where the light from each sign is equal to or less than 0.74 fc. The distance from each of the four adjacent signs is calculated with maximum sign area allowed by the WEHO Policy of 1,000 sqft operating at a luminance of 300 cd/m². The blue line illustrates the boundary

of Sign illuminance greater than 1.4 fc for each of the nearby signs. Light degrades exponentially as distance increases from the sign, and residentially zoned properties outside of the blue line footprint will receive light less than 1.4 fc from the sign.

In general, these rendered views of adjacent signs indicate that the direction of light from each of the adjacent signs is not aligned with the direction of the Project Sign. Therefore, light from the Project Sign and surrounding signs does not substantially increase the illuminance at any sensitive use properties.

The 9229 Sunset sign in Figure 20 is oriented in the opposite direction (northeast facing) to the nearest Project Sign face (west facing), and is distant (greater than 500 feet) from any residential properties to the east of the Project where the Project east facing sign would be visible. The 9229 Sunset sign will increase the light within Sunset Boulevard and within Doheny Road near the intersection with Sunset Boulevard. However, there is no increased light trespass illuminance at the adjacent residentially zoned properties that would exceed 1.4 fc.

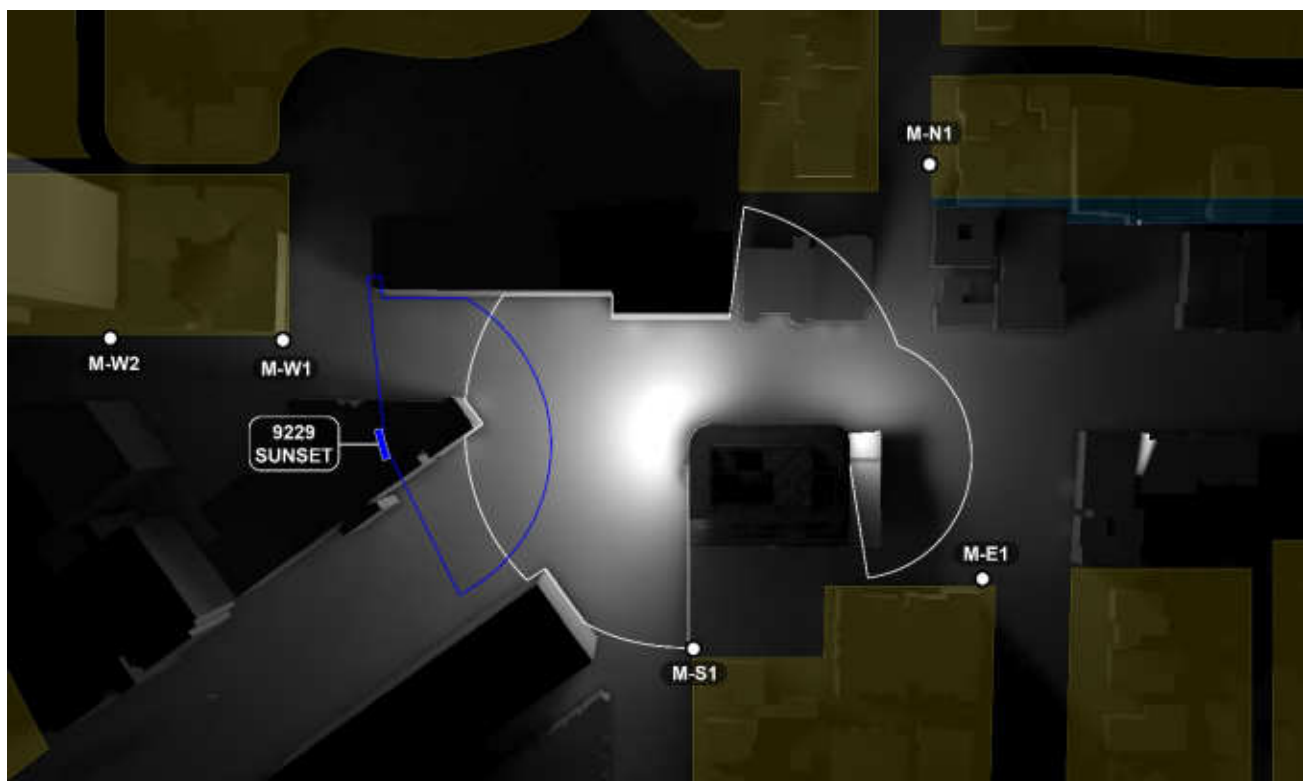


Figure 20: Project Illuminance and 9229 Sunset at 1.4 fc.

The extent of the area within the blue line shown in Figure 21 indicates the maximum distance from the 9200 Sunset sign to where the light is equal to or less than 1.4 fc. The north facing sign of 9200 Sunset does not overlap with the portion of the Project Sign that would be visible to residentially zoned properties surrounding the Project. The view from residentially zoned properties to the north of the sign at 9200 Sunset Boulevard is largely blocked by adjacent commercial buildings. The 9200 Sunset sign will increase the light within Sunset Boulevard and within Doheny Road near the intersection with Sunset Boulevard. However, there is no increased light trespass illuminance at nearby residentially zoned properties that would exceed 1.4 fc.

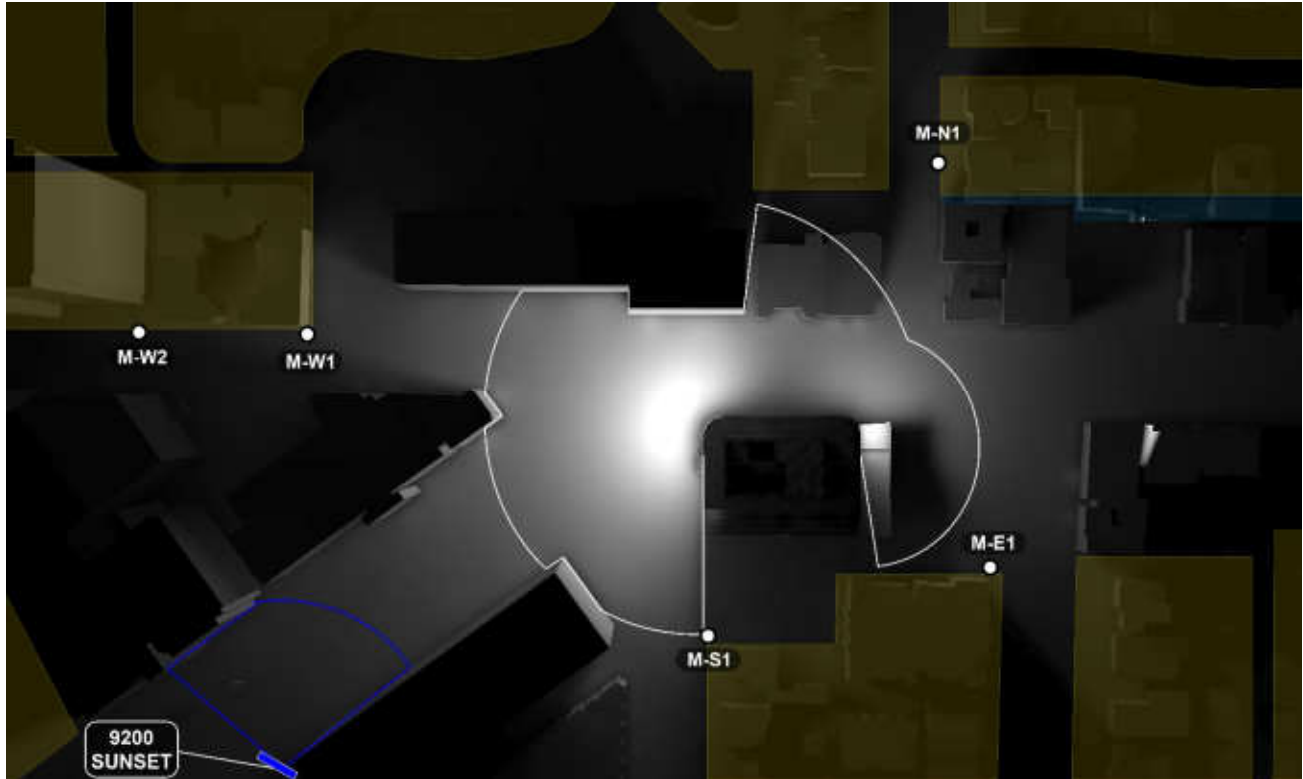


Figure 21: Project Illuminance and 9200 Sunset at 1.4 fc.

Existing signs 9169 Sunset Boulevard (Figure 22) and 9157 Sunset Boulevard (Figure 23) are south facing signs. While these two signs add light to the Sunset Boulevard right of way, they are facing the opposite direction as the Project Sign and do not add to the light from the Project Sign at any residentially zoned properties with a view to the Project Sign.

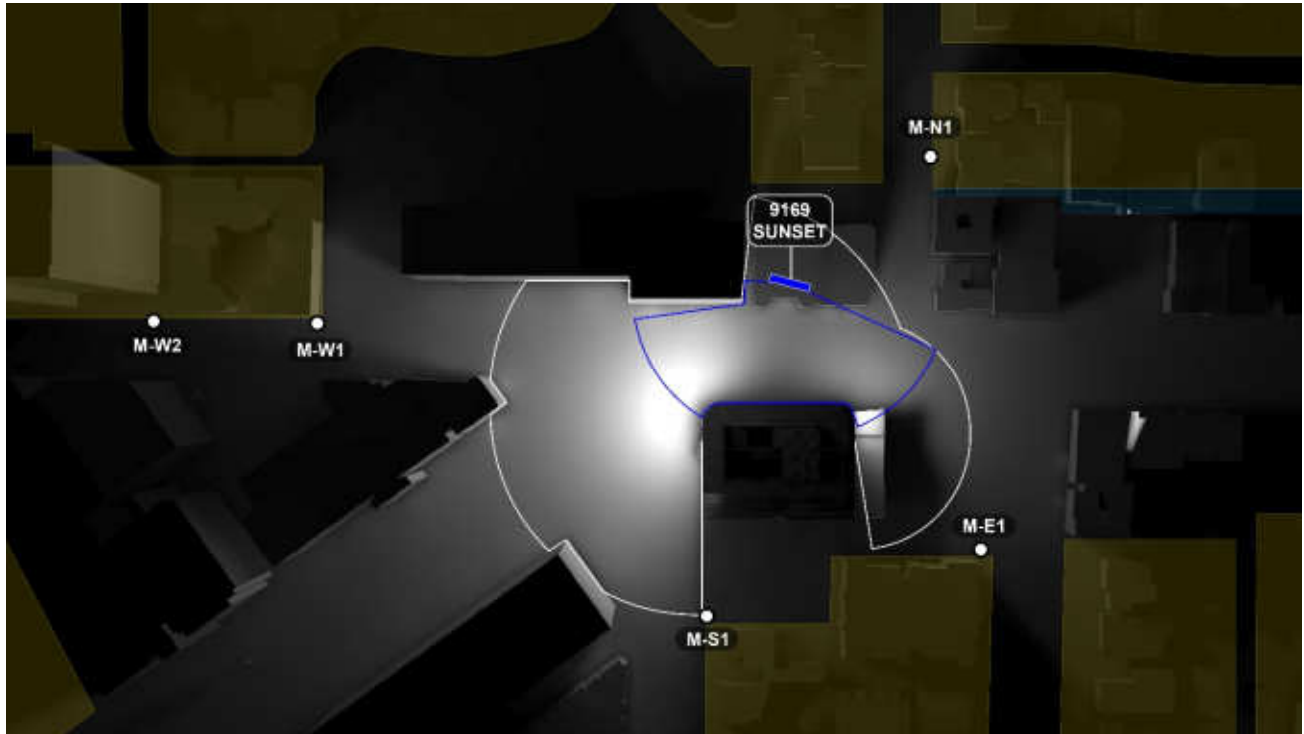


Figure 22: Project Illuminance and 9169 Sunset at 1.4 fc.



Figure 23: Project Illuminance and 9157 Sunset at 1.4 fc.

This review of nearby existing and proposed signs demonstrates that there are limited locations where the Project sign and another nearby sign are visible simultaneously. The reviewed signs are oriented toward Sunset Boulevard, which is a commercial zone, and away from the residentially zoned properties further to the north and south of the Project site. Where there is visibility of the Project Sign and an adjacent nearby sign, the light trespass does not overlap at any residentially zoned properties, and therefore does not present the potential to for light trespass from the signs to combine. Furthermore, the applicable thresholds are applied individually and do not regulate collective illuminance from the adjacent Signs or the total ambient illuminance.

9. Conclusions

The Project proposes to construct new illuminated Signs which will comply with the WEHO Policy to minimize light trespass and glare to neighboring sensitive use properties, including the following Sign lighting operational limitations:

Project Signs light trespass illuminance will be less than 1.4 fc at all adjacent residentially zoned properties located within the Sunset Strip Specific Plan City of West Hollywood as stipulated by the WEHO Policy. Furthermore, the Project Signs light trespass illuminance will be less than 0.74 fc at all residentially zoned properties located beyond the Specific Plan boundary, within the City of West Hollywood, the City of Los Angeles, and or the City of Beverly Hills.

The Project Signs will not create high contrast conditions with maximum luminance of 300 cd/m² at night and during sunset, sunrise, and overcast conditions, and will not create glare at residential properties, or roadways at night. During the day, Project Signs will be less than high contrast conditions with maximum Sign luminance of 6,000 cd/m² at residential properties or roadways.

The Project Signs will be controlled by a time clock and photocell to transition smoothly from the maximum daytime luminance of 6,000 cd/m² to the maximum nighttime luminance of 300 cd/m², beginning at 20 minutes prior to sunset and completed no later than sunset to avoid potential high contrast, glare conditions. Similarly, the Project Signs will transition from the night maximum luminance of 300 cd/m² to the day maximum luminance of 6,000 cd/m², beginning no earlier than 20 minutes before sunrise and concluding after sunrise.

This analysis accurately evaluates the potential for the Project to create a new source of light trespass or glare at adjacent residential properties. The Project Sign locations, types, dimensions, and maximum luminance are as described by the Concept Design Documents in Appendix A and are evaluated with the Signs operating simultaneously at maximum luminance. The Project Signs will not operate in this manner in practice. As such, this analysis represents a conservative evaluation of the proposed Project's potential for off-site light trespass, and glare.

9176 SUNSET BOULEVARD

DIGITAL SIGNAGE AND PUBLIC REALM ENHANCEMENT UPDATE

JANUARY 28, 2025

9176 SUNSET: DIGITAL ADVERTISING SUMMARY

9176 Sunset proposes two full-motion animated billboards that would display off-site advertising and art, including public art required by the City's Sunset Boulevard Off-Site Signage Policy. Advertising Area 1 is located along the northwest corner of the exterior of the building at the corner of Cory Avenue, and Advertising Area 2 is located along the northeast corner of the exterior of the building.

Each Advertising Area is comprised of an area for the primary off-site advertising space ("Primary Advertising Area") and a smaller area with feathered LED lighting elements that will integrate the off-site advertising space with the building's architecture ("Integration Area"). The Integration Areas will be color coordinated with and designed to enhance the Primary Advertising Areas. The feathered LED Integration Areas will never contain any images associated with the off-site advertising.

Together, the Primary Advertising Area and Integration Area comprise the "Total Advertising Area." The Project proposes 2,807 square feet of Total Advertising Area, including 2,174 square feet of Primary Advertising Area and 633 square feet of Integration Area.

Advertising Area 1 consists of 2,307 square feet of Total Advertising Area, including 1,803 square feet of Primary Advertising Area and 504 square feet of Integration Area, spanning levels 3 through 5 and a 3.5-foot portion of the roof level at the northwest corner of the exterior of the building.

Advertising Area 2 consists of 500 square feet of Total Advertising Area, including 371 square feet of Primary Advertising Area and 129 square feet of Integration Area, spanning level 4 of the northeast corner of the exterior of the building.

The full-motion animated billboards within Advertising Areas 1 and 2 are made up of variations of the same structure, or module, that are approximately 5.5 inches in width and 15 feet in height, except the modules on the roof level are 5.5 inches in width and 3.5 feet in height. Each module is 140 mm wide and includes one to four blades, or LED sticks, which are each 15 mm wide.

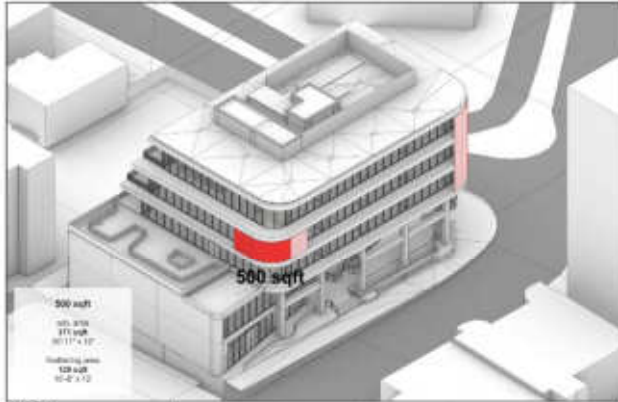
Each of the modules within the Primary Advertising Areas will contain four blades, will be placed directly next to each other with no gaps, and will be programmed between 300 and 6,000 candelas per meter squared in compliance with the Sunset Boulevard Off-Site Signage Policy. The lighting in the Integration Areas will be feathered and variable to integrate the off-site advertising space in the Primary Advertising Areas with the office building architecture and create a relationship between the two signs themselves.

At the edge of each billboard this feathering effect has been added to help reduce the brightness and density of the overall media. This reduction creates a feeling of motion or circulation around this landmark corner of West Hollywood and mimics the activity of pedestrian and vehicular traffic on Sunset Boulevard. This feathering also softens the engagement of the media with the architecture which slowly reveals the structure behind, then allows the media to re-emerge at the other corner, rather than a stark billboard edge that would appear applied or separate from the building.

To achieve this effect, the modules within the Integration Areas will contain one to four blades, will be placed with varying sized gaps – ranging from inches to feet – between them, and will be programmed to comply with the Sunset Boulevard Off-Site Signage Policy. The following exhibits demonstrate the differences in use of these modules between the Primary Advertising Areas and the Integration Areas.

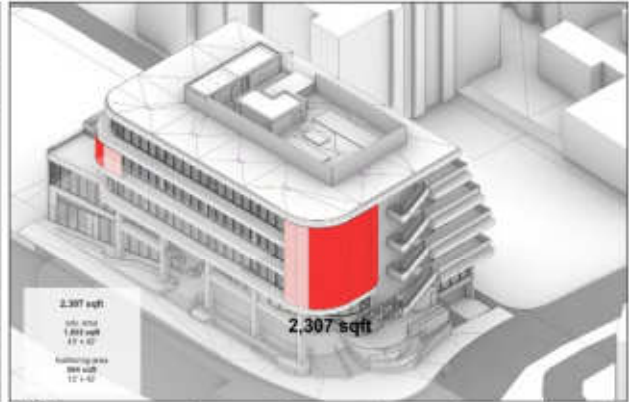
Proposed Digital Sign Area

TOTAL AREA: 2,807 SQFT



EAST

Floor	Advertising Area	Feathering Area	Total	Available Area
1st Floor	0	0	0	0
2nd Floor	0	0	0	0
3rd Floor	500	0	500	500
4th Floor	0	0	0	0
Total	500	0	500	500



WEST

Floor	Advertising Area	Feathering Area	Total	Available Area
1st Floor	0	0	0	0
2nd Floor	0	0	0	0
3rd Floor	2,307	0	2,307	2,307
4th Floor	0	0	0	0
Total	2,307	0	2,307	2,307

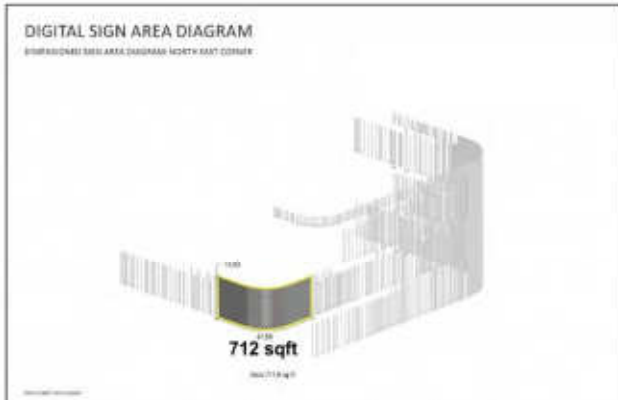
Legend:



TOTAL ADVERTISING AREA: 2,174 SQFT
AUGUST 26, 2024 ADVERTISING AREA: 2,660 SQFT

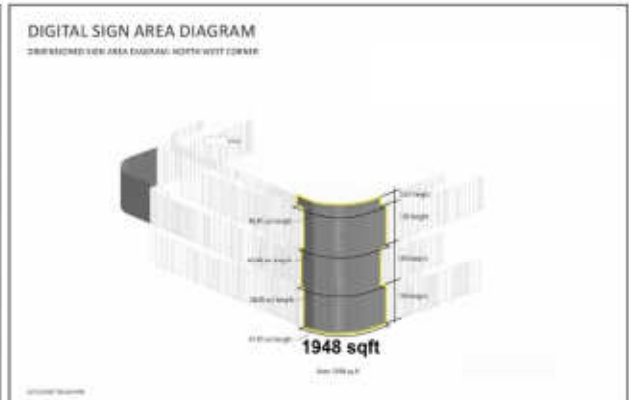
Digital Sign Area From August 26, 2024

TOTAL ADVERTISING AREA: 2,660 SQFT



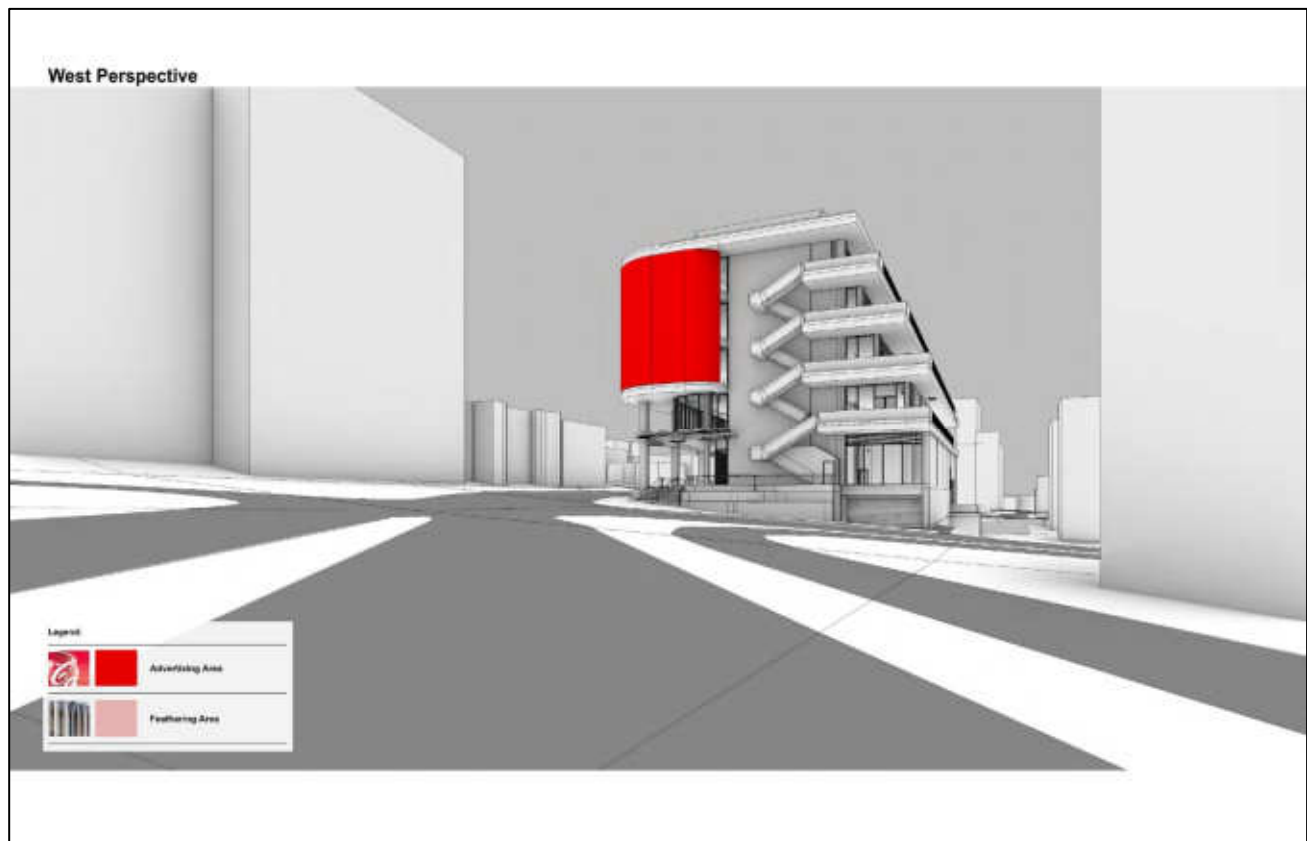
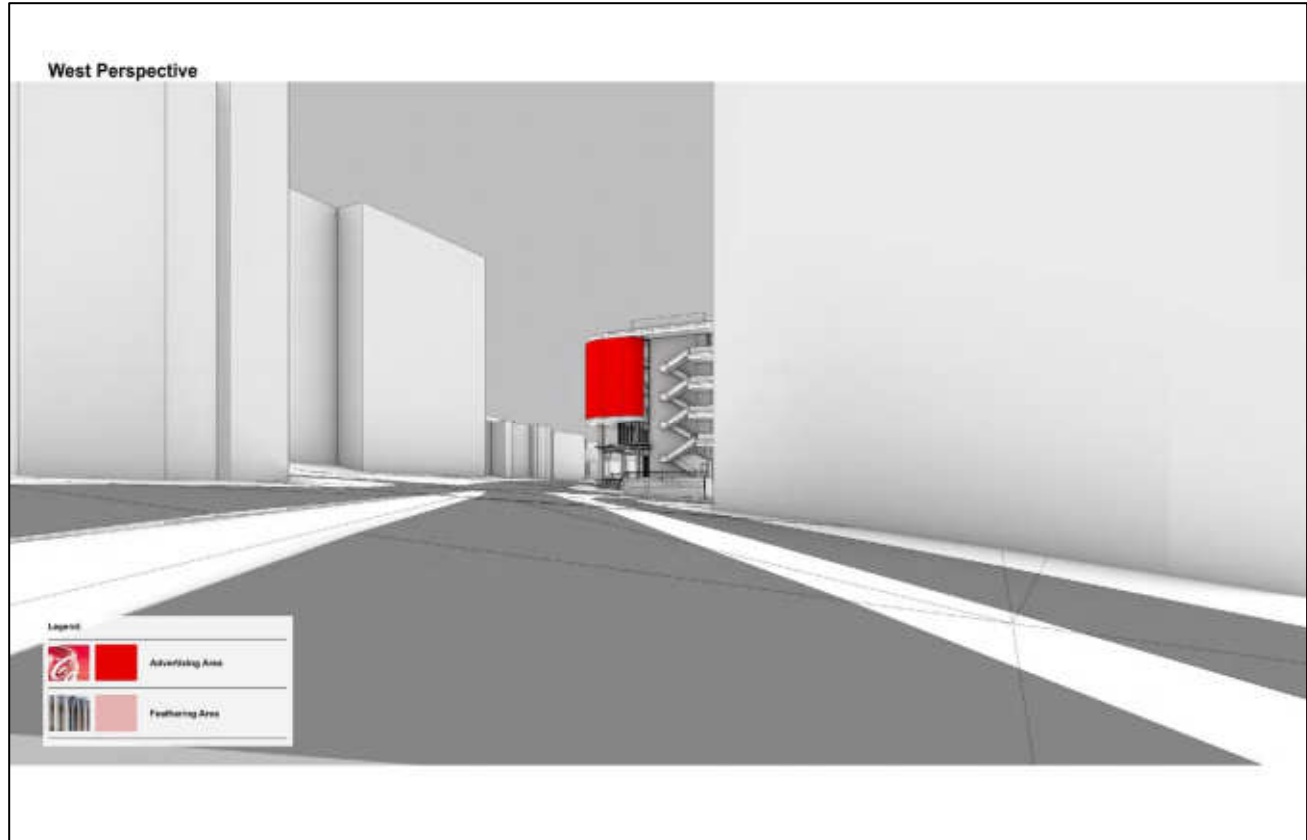
EAST

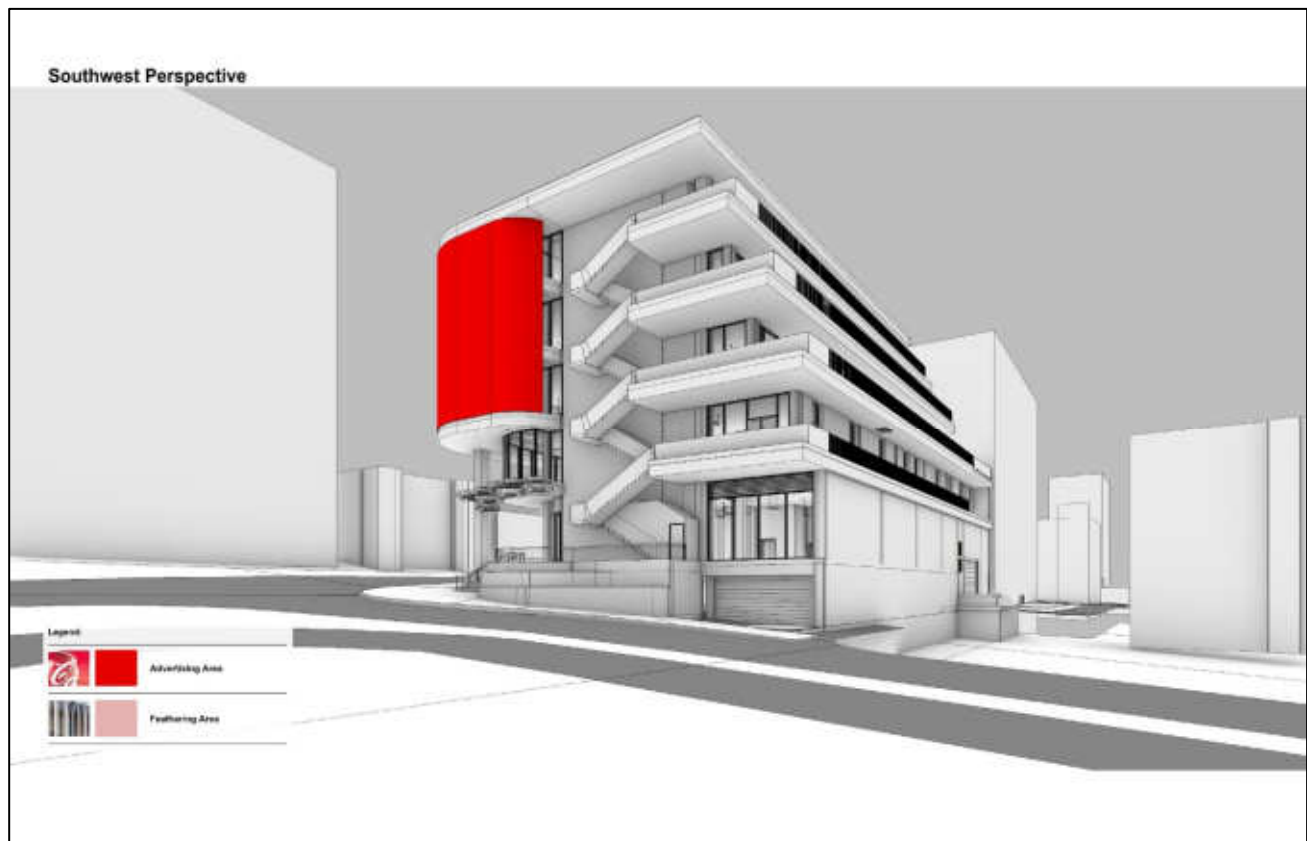
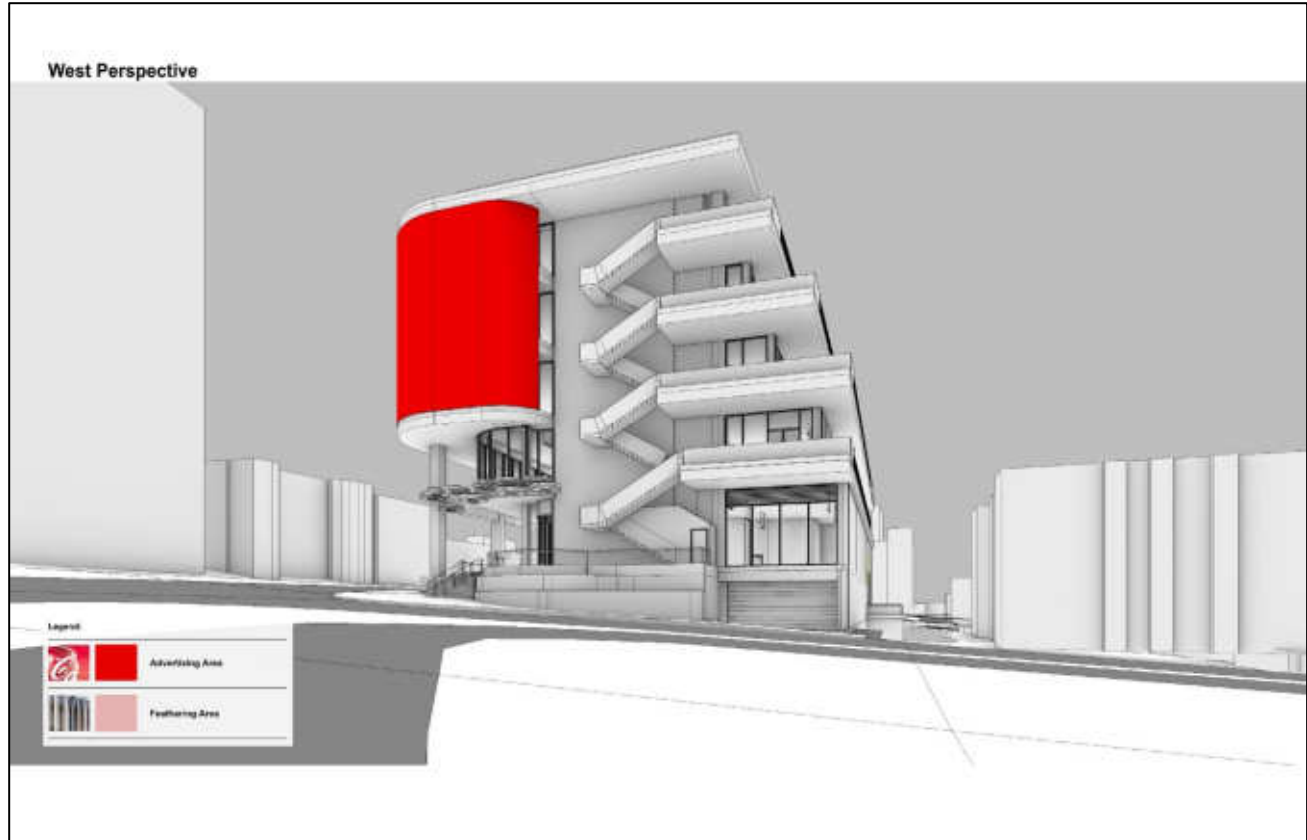
Floor	Advertising Area	Feathering Area	Total	Available Area
1st Floor	0	0	0	0
2nd Floor	0	0	0	0
3rd Floor	712	0	712	712
4th Floor	0	0	0	0
Total	712	0	712	712



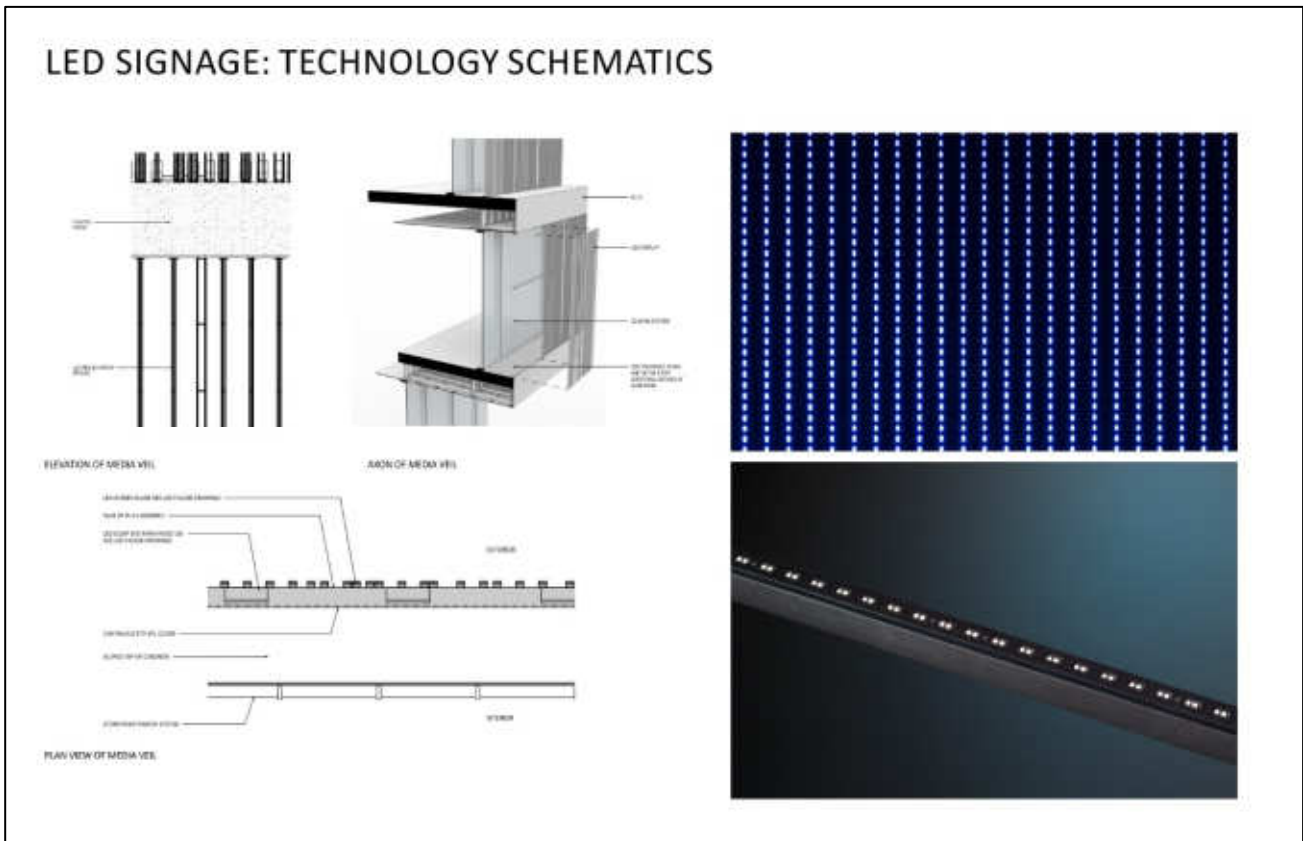
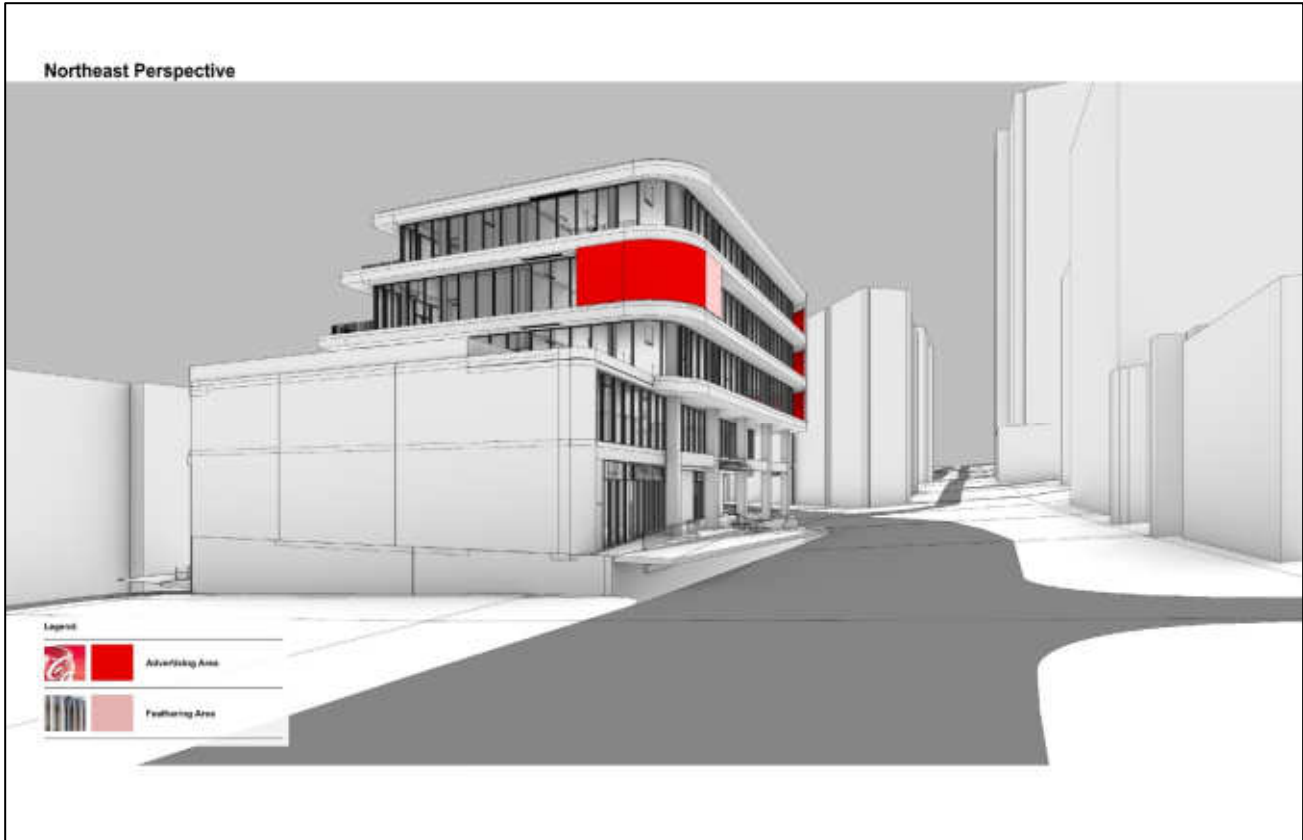
WEST

Floor	Advertising Area	Feathering Area	Total	Available Area
1st Floor	0	0	0	0
2nd Floor	0	0	0	0
3rd Floor	1,948	0	1,948	1,948
4th Floor	0	0	0	0
Total	1,948	0	1,948	1,948



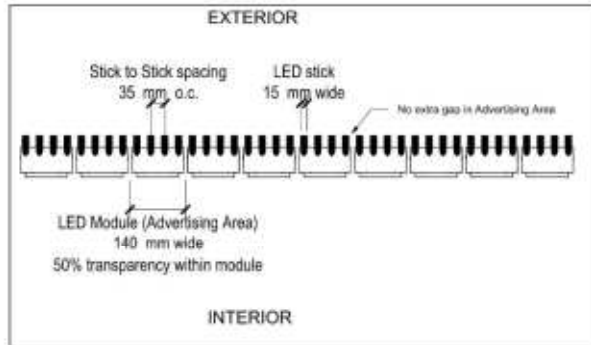




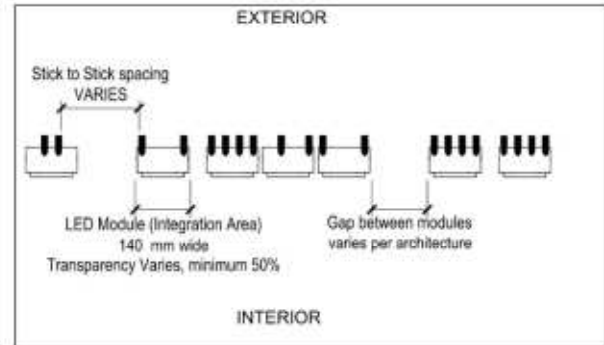


LED SIGNAGE AREA VS INTEGRATION AREA: DENSITY COMPARISON

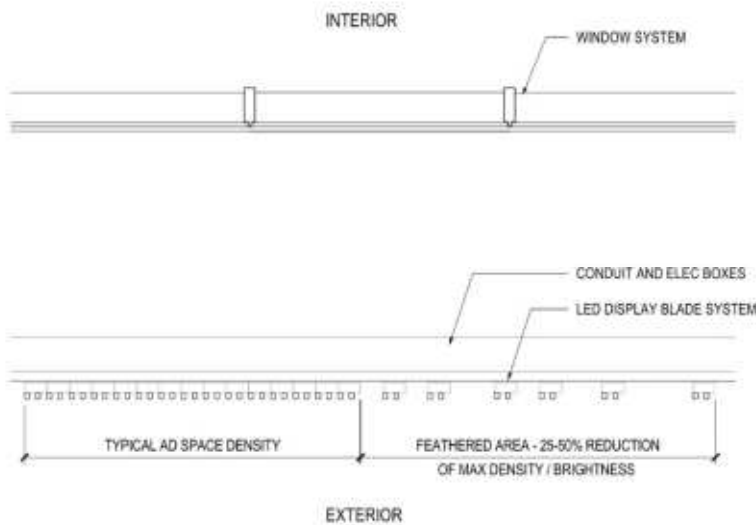
ADVERTISING AREA CALCULATION PLAN



INTEGRATION AREA PLAN



LED SIGNAGE: INTEGRATION AREA 'FEATHERING' DETAIL



APPENDIX B: City of West Hollywood Ordinance No. 19-1063, Attachment A, pgs. 13, 14, 15

- 5. Lighting and Operational Standards.** All new or modified off-site advertising signs, architectural lighting, and temporary displays shall comply with the following luminance and operational standards.
- a. Hours of Operation: All digital billboards shall meet the following limits for time of day and ambient lighting conditions:
 - i. Sign luminance shall change during each day on the following schedule:
 - 1. Daytime: From sunrise until 20 minutes prior to sunset, luminance shall not exceed 6,000 candelas per meter squared. Any portions of signs that are less than 10' above adjacent side shall not exceed 2,400 candelas.
 - 2. Evening: From sunset until 20 minutes prior to sunrise Luminance shall not exceed 300 candelas per meter squared.
 - 3. After Hours: From 2:00 am until sunrise, no animated content or moving patterns shall be permitted.
 - b. Illuminance
 - i. Illuminance from signs or architectural lights shall not exceed 1.4 foot candles at any adjacent residential zoned property line.
 - c. Digital Sign Control and Transitions.
 - i. Sign luminance shall transition smoothly between the hours of operation limits above over a time period of no less than 20 minutes. All transitions shall be completed so that the maximum allowable luminance is achieved by the stated time listed above.
 - ii. When ambient sunlight illuminance during daytime is less than 100 foot candles for more than one (1) hour, the digital billboard should transition at a smooth rate of change from the daytime luminance level permitted above to the evening luminance level permitted at a suggested rate of no less than 20 minutes.
 - iii. Each image displayed on a digital billboard shall not be refreshed more often than once every 8 seconds.
 - iv. Each image displayed on a digital billboard (i.e., each individual advertisement or artwork) shall fade in from the previous image over no less than one (1) second, and shall fade out over no less than one (1) second to the image of the immediately succeeding content.
 - d. Visual Comfort and Contrast Control
 - i. Digital billboards shall not incorporate driver interaction features.
 - ii. No signs shall use colors or images that replicate or could be confused with traffic safety signage.
 - iii. No signs shall use scrolling text.
 - iv. Signs shall not use stroboscopic or flashing images which rapidly change direction, oscillate, flash or reverse in contrast.
 - v. Animated content and moving images shall be designed specifically for the size and format of the digital billboard.
 - vi. Animated content shall not exhibit
 - 1. Rapidly changing images shall use dissolves for transitions between static images, and between static and animated content;
 - 2. Sequences that result in visible brightness change over more than ten percent (10%) of the total display area at a greater rate than three (3) changes per second; or
 - 3. Edits at a rate of more than one (1) edit every three (3) seconds
 - e. Renewable Energy Use.

- i. All new billboard operations shall utilize the highest available clean energy tier from the City's energy provider to the extent feasible.
 - ii. The incremental energy usage attributable to digital signs, as defined in 4.c, should be fully offset to the extent feasible through demonstrated improvement in the energy performance for new buildings or major renovations of existing buildings.
- f. Audio. On site sound shall be allowed only during special events.
- g. Monitoring
- i. All digital billboard operators shall submit a Lighting Monitoring Report to the Director upon installation, and at three year intervals thereafter to confirm conformance with the lighting requirements above. The report shall include:
 1. Digital billboard luminance measured in nits (candelas per square meter). Measurements shall be conducted at the property line of the digital billboard site, or in the nearest adjacent public right of way, perpendicular to the digital billboard sign face.
 2. Digital billboard sign illuminance measured in foot candles. Measurements shall be conducted perpendicular to the digital billboard sign face, at the property line containing the digital billboard, and at adjoining residential use property or properties. The illuminance meter shall be aimed toward the sign face from the measurement location.
 3. All measurements shall include both luminance and illuminance for three conditions:
 - a. The sign off
 - b. The sign illuminated with an image
 - c. The sign illuminated using an all-white display
 - ii. Complaints about lighting will be investigated by the City, and if determined necessary by the Director, the digital billboard operator shall provide an updated Lighting Monitoring Report within 72 hours of the notice from the City. The City shall reserve the right to conduct digital billboard lighting measurements. If the measured luminance and or illuminance exceed the data presented in operator's Lighting Monitoring Report, the findings of the City report shall prevail.

- 6. Architectural Lighting.** Architectural lighting may be integrated into a building façade to enhance the architectural design of the building if the following requirements are met:
- a. Integral large scale architectural lighting, digital or otherwise, shall contain no commercial logos, images, or messages that may be interpreted as advertising.
 - b. Architectural lighting shall not be counted towards permitted signage area, either on or off-site, and shall not be considered a billboard.
 - c. Architectural lighting is subject to maximum allowable lighting levels of Section 5.
 - d. Architectural lighting shall be designed and operated to minimize impact on adjacent buildings.
- 7. Temporary Creative Billboards or Tall Walls.** Temporary modification to existing billboards or tall wall signs may be permitted in compliance with this section. The following regulations are intended to encourage creatively designed short-term installations that make a positive visual contribution to Sunset Boulevard and to the overall image of the city.
- a. **Approval Authority.** Temporary creative billboards and tall walls are subject to approval by the Director.
 - b. **Time Limit.** The Director may approve the placement of a temporary creative billboard or tall wall for a maximum period of 12 months. One six-month time extension may be approved or denied by the Director and the temporary creative billboard or tall wall shall be removed immediately upon expiration. Certain types of physical extensions may be installed for a longer period, as allowed by state law.
 - c. **Standards:** A temporary creative billboard or tall wall sign shall be designed and located in compliance with all of the following standards:
 - i. The temporary creative billboard or tall wall sign shall alter an existing sign without changing its location. Any enlargement of the sign shall be designed as an integral part of the image and contribute to the overall creativity of its design.
 - ii. The temporary creative billboard or tall wall sign shall be properly sited and well-integrated within the context of its surroundings.
 - iii. Temporary creative billboard or tall wall shall be an inventive and original representation of the product or business being advertised.
 - iv. The temporary creative billboard or tall wall sign shall exhibit one or more of the following elements:
 1. Three-dimensional props and extensions.
 2. Extensions with cut-out shapes or voids.
 3. Integrated thematic lighting such as neon, LED, images which change from day to night through lighting effects, projected light, video projections, or other emerging technologies.
 4. Moving or animated mechanical elements.
 5. Different day-time and night-time images.
 6. Hand-painted graphics or graphics crafted on-site.
 7. Alternative textures and materials, such as plants and vegetation.
 8. Live action.

SUNSET STRIP OFF-SITE SIGNAGE POLICY
INITIAL STUDY / NEGATIVE DECLARATION

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. The existing lighting conditions along Sunset Boulevard include a variety of light sources that contribute to a brightly illuminated outdoor urban environment. The streets and sidewalks along Sunset Boulevard have a relatively high illumination consistent with the vehicular design standards for a high volume arterial street. The public right of way is surrounded on both north and south with commercial properties where parking lot lights and exterior building lighting is frequent. Within this well-illuminated context, lighted billboards and signs are prominent but are not excessively bright in comparison to their surroundings.

Additional lighting or lighting in new locations along the Sunset Strip could result in potential effects if new sources of light trespass were introduced and if the light trespass were to affect light-sensitive receptors such that daytime or nighttime views would become adversely affected. Light-sensitive receptors are generally considered residential properties, and also may include hotel, hospital or nursing home uses, where excessive light at night may impact the use of the property. Light trespass is measured in terms of illuminance in a unit of measurement called a "footcandle," which is the illuminance on a one-square-foot surface coming from a uniform source of light.

Along Sunset Boulevard, most residential properties are set back behind the commercial properties that front onto Sunset Boulevard. The slope to the north and south of Sunset Boulevard significantly affects the visibility of the signs from residential properties. To the north, the properties are typically situated well above the elevation of Sunset Boulevard, and in most locations, properties are well above the top elevation of illuminated signs. To the north of Sunset Boulevard, the ambient light levels at residential streets and properties are very low, so the light at these properties from signs on Sunset Boulevard may be more noticeable. However, most of the existing illuminated signs are located and directed such that there are few locations where signs project significant light trespass or glare. The distance from Sunset Strip properties to adjacent residential properties varies considerably. The properties within close proximity are generally 250 feet to 300 feet away from the existing signs on Sunset Boulevard. To the south of Sunset Boulevard, the residential properties are below the elevation of Sunset Boulevard and well below the elevation of the illuminated signs. Signs located on the south side of Sunset Boulevard have the potential to create light trespass and or glare due to the difference in elevation. However, most of the existing illuminated signs are located and directed such that there are few locations where signs project significant light trespass or glare.

The proposed project would change the existing lighting environment in the project area. Digital conversions would replace existing static illuminated signs with LED screens. Additionally, digital conversions may also involve reorientation of a billboard face from horizontal to vertical, which would change the surface area that is illuminated. Some billboards that are being converted to digital may also undergo one or more of the allowable standard modifications. Standard modifications (to either digital or static billboards) would not involve a substantial change in billboard illuminance light trespass; however, a reoriented billboard face, a billboard that undergoes a height or location adjustment, and the addition of a second face to a single-sided

APPENDIX D: 2022 California Administrative Code, Section 10-114
10-114 – DETERMINATION OF OUTDOOR LIGHTING ZONES AND ADMINISTRATIVE RULES FOR USE

This section establishes rules for implementing outdoor lighting zones to show compliance with Section 140.7 of Title 24, California Code of Regulations, Part 6.

- (a) **Lighting Zones.** Exterior lighting allowances in California vary by Lighting Zones (LZ).
- (b) **Lighting Zone Characteristics.** TABLE 10-114-A specifies the relative ambient illumination level and the statewide default location for each lighting zone.
- (c) **Amending the Lighting Zone Designation.** A local jurisdiction may officially adopt changes to the lighting zone designation of an area by following a public process that allows for formal public notification, review, and comment about the proposed change. The local jurisdiction may determine areas where Lighting Zone 4 is applicable and may increase or decrease the lighting zones for areas that are in State Default Lighting Zones 1, 2 and 3, as specified in TABLE 10-114-A.

TABLE 10-114-A LIGHTING ZONE CHARACTERISTICS AND RULES FOR AMENDMENTS BY LOCAL JURISDICTIONS

Zone	Ambient Illumination	State wide Default Location	Moving Up to Higher Zones	Moving Down to Lower Zones
LZ0	Very Low	Undeveloped areas of government designated parks, recreation areas, and wildlife preserves.	Undeveloped areas of government designated parks, recreation areas, and wildlife preserves can be designated as LZ1 or LZ2 if they are contained within such a zone.	Not applicable
LZ1	Low	Rural areas, as defined by the 2010 U.S. Census. These areas include: single or dual family residential areas, parks, and agricultural zone districts, developed portion of government designated parks, recreation areas, and wildlife preserves. Those that are wholly contained within a higher lighting zone may be considered by the local government as part of that lighting zone.	Developed portion of a government designated park, recreation area, or wildlife preserve, can be designated as LZ2 or LZ3 if they are contained within such a zone. Retail stores, located in a residential neighborhood, and rural town centers, as defined by the 2010 U.S. Census, can be designated as LZ2 if the business operates during hours of darkness.	Not applicable.
LZ2	Moderate	Urban clusters, as defined by the 2010 U.S. Census. The following building types may occur here: multifamily housing, mixed use residential neighborhoods, religious facilities, schools, and light commercial business districts or industrial zoning districts.	Special districts within a default LZ2 zone may be designated as LZ3 or LZ4 by a local jurisdiction. Examples include special commercial districts or areas with special security considerations located within a mixed-use residential area or city center.	Special districts may be designated as LZ1 by the local jurisdiction, without any size limits.
LZ3	Moderately High	Urban areas, as defined by the 2010 U.S. Census. The following building types may occur here: high intensity commercial corridors, entertainment centers, and heavy industrial or manufacturing zone districts.	Special districts within a default LZ3 may be designated as a LZ4 by local jurisdiction for high intensity nighttime use, such as entertainment or commercial districts or areas with special security considerations requiring very high light levels.	Special districts may be designated as LZ1 or LZ2 by the local jurisdiction, without any size limits.
LZ4	High	None.	Not applicable.	Not applicable.

NOTE: Authority: Sections 25402 and 25402.1, Public Resources Code. Reference: Sections 25007, 25008, 25218.5, 25310, 25402, 25402.1, 25402.4, 25402.5, 25402.8, and 25943, Public Resources Code.

10-114 – DETERMINATION OF OUTDOOR LIGHTING ZONES AND ADMINISTRATIVE RULES FOR USE

APPENDIX E: 2022 California Energy Code, Section 140.7 Prescriptive Requirements for Outdoor Lighting

SECTION 140.7 – PRESCRIPTIVE REQUIREMENTS FOR OUTDOOR LIGHTING

(a) An outdoor lighting installation complies with this section if it meets the requirements in Subsections (b) and (c), and the actual outdoor lighting power installed is no greater than the allowed outdoor lighting power calculated under Subsection (d). The allowed outdoor lighting shall be calculated according to outdoor lighting zone in Title 24, Part 1, Section 10-114.

Exceptions to Section 140.7(a): When more than 50 percent of the light from a luminaire falls within one or more of the following applications, the lighting power for that luminaire shall be exempt from Section 140.7:

1. Temporary outdoor lighting.
2. Lighting required and regulated by the Federal Aviation Administration, and the Coast Guard.
3. Lighting for public streets, roadways, highways and traffic signage lighting, including lighting for driveway entrances occurring in the public right-of-way.
4. Lighting for sports and athletic fields, and children’s playgrounds.
5. Lighting for industrial sites, including but not limited to, rail yards, maritime shipyards and docks, piers and marinas, chemical and petroleum processing plants, and aviation facilities.
6. Lighting of public monuments.
7. Lighting of signs complying with the requirements of Sections 130.3 and 140.8.
8. Lighting of tunnels, bridges, stairs, wheelchair elevator lifts for American with Disabilities Act (ADA) compliance, and ramps that are other than parking garage ramps.
9. Landscape lighting.
10. In theme parks: outdoor lighting only for themes and special effects.
11. Lighting for outdoor theatrical and other outdoor live performances, provided that these lighting systems are additions to area lighting systems and are controlled by a multiscene or theatrical cross-fade control station accessible only to authorized operators.
12. Outdoor lighting systems for qualified historic buildings, as defined in the California Historic Building Code (Title 24, Part 8), if they consist solely of historic lighting components or replicas of historic lighting components. If lighting systems for qualified historic buildings contain some historic lighting components or replicas of historic components, combined with other lighting components, only those historic or historic replica components are exempt. All other outdoor lighting systems for qualified historic buildings shall comply with Section 140.7.

(b) **Outdoor lighting power trade-offs.** Outdoor lighting power trade-offs shall be determined as follows:

1. Allowed lighting power determined according to Section 140.7(d)1 for general hardscape lighting allowance may be traded to specific applications in Section 140.7(d)2, provided the hardscape area from which the lighting power is traded continues to be illuminated in accordance with Section 140.7(d)1A.
2. Allowed lighting power determined according to Section 140.7(d)2 for additional lighting power allowances for specific applications shall not be traded between specific applications, or to hardscape lighting in Section 140.7(d)1.
3. Trading of lighting power allowances between outdoor and indoor areas shall not be permitted.

(c) **Calculation of actual lighting power.** The wattage of outdoor luminaires shall be determined in accordance with Section 130.0(c).

(d) **Calculation of allowed lighting power.** The allowed lighting power shall be the combined total of the sum of the general hardscape lighting allowance determined in accordance with Section 140.7(d)1, and the sum of the additional lighting power allowance for specific applications determined in accordance with Section 140.7(d)2.



1. **General hardscape lighting allowance.** Determine the general hardscape lighting power allowances as follows:
 - A. The general hardscape area of a site shall include parking lot(s), roadway(s), driveway(s), sidewalk(s), walkway(s), bikeway(s), plaza(s), bridge(s), tunnel(s), and other improved area(s) that are illuminated. In plan view of the site, determine the illuminated hardscape area, which is defined as any hardscape area that is within a square pattern around each luminaire or pole that is ten times the luminaire mounting height with the luminaire in the middle of the pattern, less any areas that are within a building, beyond the hardscape area, beyond property lines or obstructed by a structure. The illuminated hardscape area shall include portions of planters and landscaped areas that are within the lighting application and are less than or equal to 10 feet wide in the short dimensions and are enclosed by hardscape or other improvement on at least three sides. Multiply the illuminated hardscape area by the area wattage allowance (AWA) from Table 140.7-A for the appropriate lighting zone.
 - B. Determine the perimeter length of the general hardscape area. The total perimeter shall not include portions of hardscape that are not illuminated according to Section 140.7(d)1A. Multiply the hardscape perimeter by the linear wattage allowance (LWA) for hardscape from Table 140.7-A for the appropriate lighting zone. The perimeter length for hardscape around landscaped areas and permanent planters shall be determined as follows:
 - i. Landscaped areas completely enclosed within the hardscape area, and which have a width or length less than 10 feet wide, shall not be added to the hardscape perimeter length.
 - ii. Landscaped areas completely enclosed within the hardscape area, and which width or length is a minimum of 10 feet wide, the perimeter of the landscaped areas or permanent planter shall be added to the hardscape perimeter length.
 - iii. Landscaped edges that are not abutting the hardscape shall not be added to the hardscape perimeter length.
 - C. Determine the Initial Wattage Allowance (IWA) for general hardscape lighting from Table 140.7-A for the appropriate lighting zone. The hardscape area shall be permitted one IWA per site.
 - D. The general hardscape lighting allowance shall be the sum of the allowed watts determined from (A), (B) and (C) above.
2. **Additional lighting power allowance for specific applications.** Additional lighting power for specific applications shall be the smaller of the additional lighting allowances for specific applications determined in accordance with Table 140.7-8 for the appropriate lighting zone, or the actual installed lighting power meeting the requirements for the allowance.

TABLE 140.7-A GENERAL HARDSCAPE LIGHTING POWER ALLOWANCE

Type of Power Allowance	Lighting Zone 0 ¹	Lighting Zone 1 ²	Lighting Zone 2 ³	Lighting Zone 3 ³	Lighting Zone 4 ³
Area Wattage Allowance (AWA)	No allowance ¹	0.016 W/ft ²	0.019 W/ft ²	0.021 W/ft ²	0.024 W/ft ²
Linear Wattage Allowance (LWA)	No allowance ¹	0.13 W/lf	0.15 W/lf	0.20 W/lf	0.29 W/lf
Initial Wattage Allowance (IWA)	No allowance ¹	150 W	200 W	250 W	320 W

¹ Continuous lighting is explicitly prohibited in Lighting Zone 0. A single luminaire of 15 Watts or less may be installed at an entrance to a parking area, trail head, fee payment kiosk, outhouse, or toilet facility, as required to provide safe navigation of the site infrastructure. Luminaires installed shall meet the maximum zonal lumen limits as specified in Section 130.2(b).

² RESERVED.

³ Narrow band spectrum light sources with a dominant peak wavelength greater than 580 nm – as mandated by local, state, or federal agencies to minimize the impact on local, active professional astronomy or nocturnal habitat of specific local fauna – shall be allowed a 2.0 lighting power allowance multiplier.

 SECTION 140.7 – PRESCRIPTIVE REQUIREMENTS FOR OUTDOOR LIGHTING

TABLE 140.7-B ADDITIONAL LIGHTING POWER ALLOWANCE FOR SPECIFIC APPLICATIONS
All area and distance measurements in plan view unless otherwise noted.

Lighting Application	Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4
WATTAGE ALLOWANCE PER APPLICATION. Use all that apply as appropriate.					
Building Entrances or Exits. Allowance per door. Luminaires qualifying for this allowance shall be within 20 feet of the door.	Not applicable	9 watts	15 watts	19 watts	21 watts
Primary Entrances to Senior Care Facilities, Police Stations, Healthcare Facilities, Fire Stations, and Emergency Vehicle Facilities. Allowance per primary entrance(s) only. Primary entrances shall provide access for the general public and shall not be used exclusively for staff or service personnel. This allowance shall be in addition to the building entrance or exit allowance above. Luminaires qualifying for this allowance shall be within 100 feet of the primary entrance.	Not applicable	20 watts	40 watts	57 watts	60 watts
Drive Up Windows. Allowance per customer service location. Luminaires qualifying for this allowance shall be within 2 mounting heights of the sill of the window.	Not applicable	16 watts	30 watts	50 watts	75 watts
Vehicle Service Station Uncovered Fuel Dispenser. Allowance per fueling dispenser. Luminaires qualifying for this allowance shall be within 2 mounting heights of the dispenser.	Not applicable	55 watts	77 watts	81 watts	135 watts
ATM Machine Lighting. Allowance per ATM machine. Luminaires qualifying for this allowance shall be within 50 feet of the dispenser.	Not applicable	100 watts for first ATM machine, 35 watts for each additional ATM machine.			
WATTAGE ALLOWANCE PER UNIT LENGTH (w/linear ft). May be used for one or two frontage side(s) per site.					
Outdoor Sales Frontage. Allowance for frontage immediately adjacent to the principal viewing location(s) and unobstructed for its viewing length. A corner sales lot may include two adjacent sides provided that a different principal viewing location exists for each side. Luminaires qualifying for this allowance shall be located between the principal viewing location and the frontage outdoor sales area.	Not applicable	No Allowance	11 W/linear ft	19 W/linear ft	25 W/linear ft
WATTAGE ALLOWANCE PER HARDSCAPE AREA (W/ft²). May be used for any illuminated hardscape area on the site.					
Hardscape Ornamental Lighting. Allowance for the total site illuminated hardscape area. Luminaires qualifying for this allowance shall be rated for 50 watts or less as determined in accordance with Section 130.0(c), and shall be post-top luminaires, lanterns, pendant luminaires, or chandeliers.	Not applicable	No Allowance	0.007 W/ft ²	0.013 W/ft ²	0.019 W/ft ²
WATTAGE ALLOWANCE PER SPECIFIC AREA (W/ft²). Use as appropriate provided that none of the following specific applications shall be used for the same area.					
Building Facades. Only areas of building façade that are illuminated shall qualify for this allowance. Luminaires qualifying for this allowance shall be aimed at the façade and shall be capable of illuminating it without obstruction or interference by permanent building features or other objects.	Not applicable	No Allowance	0.100 W/ft ²	0.170 W/ft ²	0.225 W/ft ²
Outdoor Sales Lots. Allowance for uncovered sales lots used exclusively for the display of vehicles or other merchandise for sale. Driveways, parking lots or other non-sales areas shall be considered hardscape areas even if these areas are completely surrounded by sales lot on all sides. Luminaires qualifying for this allowance shall be within 5 mounting heights of the sales lot area.	Not applicable	0.060 W/ft ²	0.210 W/ft ²	0.280 W/ft ²	0.485 W/ft ²
Vehicle Service Station Hardscape. Allowance for the total illuminated hardscape area less area of buildings, under canopies, off property, or obstructed by signs or structures. Luminaires qualifying for this allowance shall be illuminating the hardscape area and shall not be within a building, below a canopy, beyond property lines, or obstructed by a sign or other structure.	Not applicable	0.006 W/ft ²	0.068 W/ft ²	0.138 W/ft ²	0.200 W/ft ²
Vehicle Service Station Canopies. Allowance for the total area within the drip line of the canopy. Luminaires qualifying for this allowance shall be located under the canopy.	Not applicable	0.220 W/ft ²	0.430 W/ft ²	0.580 W/ft ²	1.010 W/ft ²

SECTION 140.7 – PRESCRIPTIVE REQUIREMENTS FOR OUTDOOR LIGHTING

Sales Canopies. Allowance for the total area within the drip line of the canopy. Luminaires qualifying for this allowance shall be located under the canopy.	Not applicable	No Allowance	0.470 W/ft ²	0.622 W/ft ²	0.740 W/ft ²
Non-sales Canopies and Tunnels. Allowance for the total area within the drip line of the canopy or inside the tunnel. Luminaires qualifying for this allowance shall be located under the canopy or tunnel.	Not applicable	0.057 W/ft ²	0.137 W/ft ²	0.270 W/ft ²	0.370 W/ft ²
Guard Stations. Allowance up to 1,000 square feet per vehicle lane. Guard stations provide access to secure areas controlled by security personnel who stop and may inspect vehicles and vehicle occupants, including identification, documentation, vehicle license plates, and vehicle contents. Qualifying luminaires shall be within 2 mounting heights of a vehicle lane or the guardhouse.	Not applicable	0.081 W/ft ²	0.176 W/ft ²	0.325 W/ft ²	0.425 W/ft ²
Student Pick-up/Drop-off zone. Allowance for the area of the student pick-up/drop-off zone, with or without canopy, for preschool through 12th grade school campuses. A student pick-up/drop off zone is a curbside, controlled traffic area on a school campus where students are picked-up and dropped off from vehicles. The allowed area shall be the smaller of the actual width or 25 feet, times the smaller of the actual length or 250 feet. Qualifying luminaires shall be within 2 mounting heights of the student pick-up/drop-off zone.	Not applicable	No Allowance	0.056 W/ft ²	0.200 W/ft ²	No Allowance
Outdoor Dining. Allowance for the total illuminated hardscape of outdoor dining. Outdoor dining areas are hardscape areas used to serve and consume food and beverages. Qualifying luminaires shall be within 2 mounting heights of the hardscape area of outdoor dining.	Not applicable	0.004 W/ft ²	0.030 W/ft ²	0.050 W/ft ²	0.075 W/ft ²
Special Security Lighting for Retail Parking and Pedestrian Hardscape. This additional allowance is for illuminated retail parking and pedestrian hardscape identified as having special security needs. This allowance shall be in addition to the building entrance or exit allowance.	Not applicable	0.004 W/ft ²	0.005 W/ft ²	0.010 W/ft ²	No Allowance
Security Cameras. This additional allowance is for illuminated general hardscape area. This allowance shall apply when a security camera is installed within 2 mounting heights of the general hardscape area and mounted more than 10 feet away from a building.	Not applicable	No Allowance	0.018 W/ft ²	0.018 W/ft ²	0.018 W/ft ²

NOTE: Authority: Sections 25213, 25218, 25218.5, 25402 and 25402.1, Public Resources Code. Reference: Sections 25007, 25008, 25218.5, 25310, 25402, 25402.1, 25402.4, 25402.5, 25402.8, and 25943, Public Resources Code.

 SECTION 140.7 – PRESCRIPTIVE REQUIREMENTS FOR OUTDOOR LIGHTING

APPENDIX F: 2022 California Energy Code, Section 130.3 Sign Lighting Controls

SECTION 130.3 – SIGN LIGHTING CONTROLS

Nonresidential buildings other than healthcare facilities and hotel/motel buildings shall comply with the applicable requirements of Sections 130.3(a)1 through 130.3(a)3.

(a) **Controls for sign lighting.** All sign lighting shall meet the requirements below as applicable:

1. **Indoor signs.** All indoor sign lighting other than exit sign lighting shall be controlled with an automatic time-switch control or astronomical time-switch control.
2. **Outdoor signs.** Outdoor sign lighting shall meet the following requirements as applicable:
 - A. All outdoor sign lighting shall be controlled with a photocontrol in addition to an automatic time-switch control, or an astronomical time-switch control.

Exception to Section 130.3(a)2A: Outdoor signs in tunnels, and signs in large permanently covered outdoor areas that are intended to be continuously lit, 24 hours per day and 365 days per year.
 - B. All outdoor sign lighting that is ON both day and night shall be controlled with a dimmer that provides the ability to automatically reduce sign lighting power by a minimum of 65 percent during nighttime hours. Signs that are illuminated at night and for more than 1 hour during daylight hours shall be considered ON both day and night.

Exception to Section 130.3(a)2B: Outdoor signs in tunnels and large covered areas that are intended to be illuminated both day and night.
3. **Demand responsive Electronic Message Center (EMC) control.** See Section 110.12 for requirements for demand responsive EMC controls.

Note: Authority: Sections 25213, 25218, 25218.5, 25402 and 25402.1, Public Resources Code. Reference: Sections 25007, 25008, 25218.5, 25310, 25402, 25402.1, 25402.4, 25402.5, 25402.8, and 25943, Public Resources Code.

APPENDIX G: 2022 California Energy Code, Section 140.8 Prescriptive Requirements for Signs

SECTION 140.8 – PRESCRIPTIVE REQUIREMENTS FOR SIGNS

This section applies to all internally illuminated and externally illuminated signs, unfiltered light emitting diodes (LEDs), and unfiltered neon, both indoor and outdoor. Each sign shall comply with either Subsection (a) or (b), as applicable.

(a) Maximum allowed lighting power.

1. For internally illuminated signs, the maximum allowed lighting power shall not exceed the product of the illuminated sign area and 12 watts per square foot. For double-faced signs, only the area of a single face shall be used to determine the allowed lighting power.
2. For externally illuminated signs, the maximum allowed lighting power shall not exceed the product of the illuminated sign area and 2.3 watts per square foot. Only areas of an externally lighted sign that are illuminated without obstruction or interference, by one or more luminaires, shall be used.
3. Lighting for unfiltered light emitting diodes (LEDs) and unfiltered neon shall comply with Section 140.8(b).

(b) Alternate lighting sources. The sign shall be equipped with one or more of the following light sources:

1. High pressure sodium lamps; or
2. Metal halide lamps that are:
 - A. Pulse start or ceramic served by a ballast that has a minimum efficiency of 88 percent or greater, or
 - B. Pulse start that are 320 watts or smaller, are not 250 watt or 175 watt lamps, and are served by a ballast that has a minimum efficiency of 80 percent.

Ballast efficiency is the reference lamp power divided by the ballast input power when tested according to ANSI C82.6-2015.

3. Neon or cold cathode lamps with transformer or power supply efficiency greater than or equal to the following:
 - A. A minimum efficiency of 75 percent when the transformer or power supply rated output current is less than 50 mA; or
 - B. A minimum efficiency of 68 percent when the transformer or power supply rated output current is 50 mA or greater.

The ratio of the output wattage to the input wattage is at 100 percent tubing load.

4. Fluorescent lighting systems meeting one of the following requirements:
 - A. Use only lamps with a minimum color rendering index (CRI) of 80; or
 - B. Use only electronic ballasts with a fundamental output frequency not less than 20 kHz.
5. Light emitting diodes (LEDs) with a power supply having an efficiency of 80 percent or greater; or

Exception to Section 140.8(b)5: Single voltage external power supplies that are designed to convert 120 volt AC input into lower voltage DC or AC output, and have a nameplate output power less than or equal to 250 watts, shall comply with the applicable requirements of the appliance efficiency regulations, Appliance Efficiency Regulations (Title 20).

6. Compact fluorescent lamps that do not contain a medium screw base socket (E24/E26).

Exception 1 to Section 140.8: Unfiltered incandescent lamps that are not part of an electronic message center (EMC), an internally illuminated sign or an externally illuminated sign.

Exception 2 to Section 140.8: Exit signs. Exit signs shall meet the requirements of the Appliance Efficiency Regulations.

Exception 3 to Section 140.8: Traffic Signs. Traffic signs shall meet the requirements of the Appliance Efficiency Regulations.

APPENDIX H: IESNA 10th Edition Lighting Handbook, Table 26.4, Nighttime Outdoor Lighting Zone Definitions

Table 26.4 | Nighttime Outdoor Lighting Zone Definitions

Zone	Outdoor Lighting Situation	Definition
LZ4	High Ambient Lighting	Areas of human activity where the vision of human residents and users is adapted to high light levels. Lighting is generally considered necessary for safety, security and/or convenience and it is mostly uniform and/or continuous. After curfew, lighting may be extinguished or reduced in some areas as activity levels decline.
LZ3	Moderately High Ambient Lighting	Areas of human activity where the vision of human residents and users is adapted to moderately high light levels. Lighting is generally desired for safety, security and/or convenience and it is often uniform and/or continuous. After curfew, lighting may be extinguished or reduced in most areas as activity levels decline.
LZ2	Moderate Ambient Lighting	Areas of human activity where the vision of human residents and users is adapted to moderate light levels. Lighting may typically be used for safety and convenience but it is not necessarily uniform or continuous. After curfew, lighting may be extinguished or reduced as activity levels decline.
LZ1	Low Ambient Lighting	Areas where lighting might adversely affect flora and fauna or disturb the character of the area. The vision of human residents and users is adapted to low light levels. Lighting may be used for safety and convenience but it is not necessarily uniform or continuous. After curfew, most lighting should be extinguished or reduced as activity levels decline.
LZ0	No Ambient Lighting	Areas where the natural environment will be seriously and adversely affected by lighting. Impacts include disturbing the biological cycles of flora and fauna and/or detracting from human enjoyment and appreciation of the natural environment. Human activity is subordinate in importance to nature. The vision of human residents and users is adapted to the darkness, and they expect to see little or no lighting. When not needed, lighting should be extinguished.

APPENDIX I: IESNA 10th Edition Lighting Handbook, Table 26.5, Recommended Light Trespass Illuminance Limits

Table 26.5 | Recommended Light Trespass Illuminance Limits

Lighting Zone	Limit in lux ^a	
	Pre-curfew	Post-curfew
LZ4	15	6
LZ3	8	3
LZ2	3	1
LZ1	1	0
LZ0	0.1	0

- a. Maximum initial illuminance on a plane perpendicular to the line of sight to the luminaire(s). Plane located at observer position where light trespass is under review. [7]

APPENDIX J: Signs Lighting Illuminance Calculation (fc)

Signs light trespass illuminance data presented below is derived from the lighting illuminance calculations prepared as per the methods described in Section 6.2 above. Illuminance data is presented in the following tables with location coordinates defined relative to the elevation and horizontal distance from lower left, viewing from the Property to the vertical plane where light trespass illuminance is under review. Grid data is displayed at ten feet on center, vertical and horizontal.

Vertical Plane VP-E1

HORIZONTAL (ft)	←NORTH			SOUTH→			
	5	15	25	35	45	55	65
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vertical Plane VP-E2

← NORTH

HORIZONTAL (ft)	5	15	25	35	45	55	65	75	85	95	105	115	125	135	145
95	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

HORIZONTAL (ft)	155	165	175	185	195	205	215	225	235	245	255	265	275	285	295
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SOUTH →

HORIZONTAL (ft)	305	315	325	335	345	355	365	375	385	395	405	415
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vertical Plane VP-E3

		← NORTH														
HORIZONTAL (ft)		5	15	25	35	45	55	65	75	85	95	105	115	125	135	145
95		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

HORIZONTAL (ft)		155	165	175	185	195	205	215	225	235	245	255	265	275	285	295
95		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
75		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00
45		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
35		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
25		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

HORIZONTAL (ft)		SOUTH →				
		305	315	325	335	345
95		0.10	0.10	0.10	0.10	0.10
85		0.10	0.10	0.10	0.10	0.10
75		0.00	0.10	0.10	0.10	0.10
65		0.10	0.10	0.10	0.10	0.10
55		0.10	0.10	0.10	0.10	0.10
45		0.10	0.10	0.10	0.10	0.10
35		0.10	0.10	0.10	0.10	0.10
25		0.10	0.10	0.10	0.10	0.10
15		0.00	0.10	0.00	0.00	0.10
5		0.00	0.00	0.00	0.00	0.00

Vertical Plane VP-N1

HORIZONTAL (ft)	←WEST										EAST→	
	5	15	25	35	45	55	65	75	85	95	105	115
95	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10
85	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
75	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10
65	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
55	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
45	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.20
35	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10
25	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10
15	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.10	0.10	0.10
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vertical Plane VP-N2

HORIZONTAL (ft)	←WEST											EAST→	
	5	15	25	35	45	55	65	75	85	95	105	115	125
95	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
85	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
75	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00
65	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
55	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
45	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
35	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
25	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.10	0.10	0.10	0.10	0.10
15	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vertical Plane VP-N3

←WEST

HORIZONTAL (ft)	5	15	25	35	45	55	65	75	85	95	105	115	125	135	145
95	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

HORIZONTAL (ft)	155	165	175	185	195	205	215	225	235	245	255	265	275	285	295
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

EAST→

HORIZONTAL (ft)	305	315	325	335
95	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00

Vertical Plane VP-N4

←WEST

HORIZONTAL (ft)	5	15	25	35	45	55	65	75	85	95	105	115	125	135	145
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

HORIZONTAL (ft)	155	165	175	185	195	205	215	225	235	245	255	265	275	285	295
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

EAST→

HORIZONTAL (ft)	305	315	325	335	345	355	365	375
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vertical Plane VP-S1

HORIZONTAL (ft)	←EAST											WEST→	
	5	15	25	35	45	55	65	75	85	95	105	115	125
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.20
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.20
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10	0.20
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10

Vertical Plane VP-S2

HORIZONTAL (ft)	←EAST												WEST→		
	5	15	25	35	45	55	65	75	85	95	105	115	125	135	145
95	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00
85	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
65	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.10	0.10	0.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vertical Plane VP-S3

		←EAST														
HORIZONTAL (ft)		5	15	25	35	45	55	65	75	85	95	105	115	125	135	145
95		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		WEST→		
HORIZONTAL (ft)		155	165	175
95		0.00	0.00	0.00
85		0.00	0.00	0.00
75		0.00	0.00	0.00
65		0.00	0.00	0.00
55		0.00	0.00	0.00
45		0.00	0.00	0.00
35		0.00	0.00	0.00
25		0.00	0.00	0.00
15		0.00	0.00	0.00
5		0.00	0.00	0.00

Vertical Plane VP-W1

		←SOUTH														
HORIZONTAL (ft)		5	15	25	35	45	55	65	75	85	95	105	115	125	135	145
95		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
85		0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
75		0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
65		0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
55		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
45		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.00	0.00	0.00	0.00	0.00	0.00
35		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.10	0.00	0.00	0.00	0.00	0.00
25		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00
15		0.20	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		NORTH→										
HORIZONTAL (ft)		155	165	175	185	195	205	215	225	235	245	255
95		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vertical Plane VP-N5

HORIZONTAL (ft)	←WEST												EAST→	
	5	15	25	35	45	55	65	75	85	95	105	115	125	135
95	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
85	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
75	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
65	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
55	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
45	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
35	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
25	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
15	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
5	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.10	0.10

Vertical Plane VP-N6

HORIZONTAL (ft)	5	15	25	35	45	55	65	75	85	95	105	115	125
95	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
85	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00
75	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
65	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
55	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.10
45	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00
35	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00
25	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
15	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vertical Plane VP-N7

HORIZONTAL (ft)	EAST →							
	155	165	175	185	195	205	215	225
395	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
385	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
365	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
355	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
335	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
325	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
305	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
295	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
275	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
265	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
245	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
235	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
215	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
205	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
195	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vertical Plane VP-W2

HORIZONTAL (ft)	← SOUTH											NORTH →	
	5	15	25	35	45	55	65	75	85	95	105	115	125
395	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
385	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
375	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
365	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
355	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
335	0.10	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00
325	0.10	0.10	0.00	0.00	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
315	0.10	0.10	0.10	0.10	0.00	0.10	0.00	0.10	0.10	0.10	0.00	0.00	0.00
305	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.10	0.00	0.00
295	0.10	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00
285	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.10	0.10	0.00	0.10	0.00	0.10
275	0.10	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
265	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.10	0.10	0.10	0.10	0.10	0.10
255	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
245	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
235	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.10	0.10
225	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
215	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
205	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
195	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
185	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
175	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00
165	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
155	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00
145	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
135	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00
125	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
115	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
105	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
95	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00
85	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
75	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
65	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
55	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00