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**APPENDIX B    AESTHETICS DOCUMENTATION**

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***APPENDIX B1 SUPPLEMENTAL LIGHTING  
STUDY***

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## MEMO 2

Date: October 8, 2021

Project: The District at South Bay Amendment  
Located in the City of Carson, California

Subject: Supplemental Sign and Building Lighting Study Memorandum (Memo 2)

To: Terri Avila, Environmental Science Associates (ESA)

From: Francis Krahe, Francis Krahe & Associates Inc. (FKA)

CC: Jacob Graige, Francis Krahe & Associates Inc. (FKA)

FKA is pleased to provide the following information and analysis to evaluate the potential light and glare impacts associated with the implementation of the 2021 District at South Bay Specific Plan Project (2021 Project) located the City of Carson, California

### A. Introduction/Background

FKA completed a Lighting Study dated September 29, 2017 (the 2017 Lighting Study) for the then-proposed 2018 District at South Bay Specific Plan amendment (hereinafter referred to as the 2018 SPA). The "Project Site" constitutes a 157 acre site (formerly used as a landfill) that is located just west and southwest of the I-405 Freeway, generally between Del Amo Boulevard, Main Street, and Avalon Boulevard in the City of Carson, California. The 2017 Lighting Study, which was provided in Appendix C of the 2018 Supplemental Environmental Impact Report (2018 SEIR), included an analysis of sign lighting (Sign Lighting) and building and site lighting (Building Lighting) for the 2018 SPA. More specifically, the 2017 Lighting Study evaluated Sign Lighting and Building Lighting, within PA-2 including illuminated freeway billboard signs along the I-405 Freeway, Project Name ID signs, Wall Mounted Project ID signs, and building and site lighting as identified in the appendices attached to the 2017 Lighting Study (i.e., Appendix A, Appendix B, and Appendix C).

The 2017 Lighting Study included the following description of proposed Sign Lighting and Building Lighting (appendices referred to below are the appendices to the 2017 Lighting Study):

"This Study analyzes the Project's potential environmental impacts relating to lighting for two lighting scope components:

1. The Project's illuminated signs (Sign Lighting) as authorized by the SPA pursuant to City of Carson Municipal Code, District at South Bay Specific Plan, Sections 6.6 Signage and 6.7 Lighting, included as Appendix A of this Study) and as described by the Sign Concept Documents included as Appendix A of this Study.
2. The Project's architectural building and site lighting (Building Lighting) as described by the Lighting Design Documents included as Appendix C of this Study. The Building Lighting includes all exterior and interior lighting that may produce a new potentially significant source of light or glare at adjacent properties.

The SPA covers an area which includes several project development sites and is divided into subareas. The Project comprises three Planning Areas. Planning Area 1 would be developed with a

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mixed-use residential or commercial component; Planning Area 2 would contain regional commercial uses, including outlets, and may contain a small portion of associated restaurant uses; and Planning Area 3 would include general retail uses, consisting of major retail stores and smaller neighborhood stores, restaurants and entertainment uses along with surface parking lots and two hotels. The northern hotel is proposed to include 200 rooms while the southern hotel would consist of 150 rooms.

At this time, there is no specific guidance available on the scope or extent of Signs or Building Lighting in Planning Area 1 and Planning Area 3, therefore the analysis within this Study is limited to the Project Sign Lighting and Project Building Lighting within Planning Area 2 of the SPA only (referred to below as the Project Signs and Project Building Lighting). As set forth in the SPA, any Sign Lighting or Building Lighting within Planning Area 1 and 3 and any modifications to lighting within Planning Areas 2 that exceed the Sign Lighting and or Building Lighting project design features/parameters] set forth in this analysis below will require a separate analysis prepared in connection with an application for such Sign Lighting and or Building Lighting.”

The 2017 Lighting Study page 12, Section 5. Significance Thresholds defines the following thresholds to determine a light trespass<sup>2</sup> or glare<sup>3</sup> impact from Project lighting:

The Project would create a significant impact with regard to artificial light or glare if:

- The Project exceeds 0.74 foot-candles at the property line of a residential zoned property and therefore adversely changes the ambient light level at residential properties.
- The Project creates new high-contrast conditions visible from a field of view from a residentially zoned property. (Contrast ratios greater than 30:1 are considered “High”; as discussed in the 2017 Lighting Study contrast ratios less than 30:1 indicate medium contrast conditions, and no glare.)

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<sup>2</sup> Light trespass is the light that falls on a property but originates 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 is causing an issue, such as a residential window or balcony. (Source: Illuminating Engineering Society Handbook, 10th Edition, 19.3: Light Pollution and Trespass, page 19.7)

<sup>3</sup> Glare occurs when either the luminance is too high or the range of brightness in a visual field is too large. Glare is evaluated by measuring the luminance (foot-lamberts or metric units candelas/m<sup>2</sup>) at the source of light, such as a digital display, in comparison to the surrounding adjacent luminance. Contrast describes the extent of glare and is determined by the variation of luminance within the field of view. “High,” “Medium,” and “Low” contrast are terms used to describe contrast ratios with ratios greater than 30:1, between 10:1 and 30:1, and below 10:1, respectively. Contrast ratios above 30:1 are generally uncomfortable for the human eye to perceive. Any source luminance that is more than 50 times the adjacent background will be viewed as prominent, and may be viewed as distracting.

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In addition, based on the California Vehicle Code requirements<sup>4</sup>, 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 foot-lamberts or less, the measured brightness of the light source in foot-lambert shall not exceed 500 plus 100 times the angle, in degrees, between the driver's field of view and the light source."

The 2017 Lighting Study concluded that the 2018 SPA would not create an adverse lighting effect from Sign Lighting at surrounding residential use properties with respect to light trespass and glare with the following requirements and limits defined within the 2018 Project SPA and with the project design features noted below.

Requirements for all Project Sign Lighting:

- Sign Lighting luminance will not exceed 500 candelas/m<sup>2</sup> luminance at night from 45 minutes after sunset until 45 minutes prior to sunrise, and 10,000 candelas/m<sup>2</sup> during daytime hours from 45 minutes after sunrise until 45 minutes prior to sunset. Sign luminance shall transition smoothly from daytime luminance to nighttime luminance and vice versa.
- Sign Lighting where sign luminance has the potential to exceed 500 candelas/m<sup>2</sup> will include an electronic control mechanism to reduce sign luminance to 500 candelas/m<sup>2</sup> at any time when ambient sunlight is less than 100 fc.
- Sign Lighting with external illumination will seek to 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.

To reduce the potential for high contrast, glare conditions at adjacent residential properties from the Project Sign Lighting to a medium contrast, non-glare condition, the following mitigation measures were included in the 2017 Lighting Study and the 2018 SEIR:

- **Mitigation Measure B-2:** The distribution, placement, and orientation of signs along the I-405 Freeway shall be in substantial compliance with the signage concepts and in compliance with the sign standards in the SPA.
- **Mitigation Measure B-3:** If any portion of the illuminated surface of the sign is visible from a residential use within 1,000 feet of said sign at night, then the proposed modified Project sign luminance shall be reduced to less than 300 cd/m<sup>2</sup> at night.

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<sup>4</sup> California Vehicle Code Chapter 2, Article 3, stipulates limits to the location of light sources that may cause glare and impair the vision of drivers.

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- **Mitigation Measure B-5:** If any portion of the illuminated surface of the sign is visible from a residential use within 1000 ft. of said sign, sign area and/or sign luminance shall be limited so that the light trespass illuminance is less than 0.74 fc at residential property line.

The 2017 Lighting Study also analyzed Sign Lighting glare with respect to the California Vehicle Code, which states:

- 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 foot-lamberts or less, the measured brightness of the light source in foot-lambert shall not exceed 500 plus 100 times the angle, in degrees, between the driver's field of view and the light source

The 2017 Lighting Study analyzed Sign Lighting with respect to the California Vehicle Code at 1000 cd/m<sup>2</sup> and demonstrated the light impacts resulting from the Project Sign Lighting are below the significance threshold for excessive luminance, or glare, within the drivers field of view during night, twilight (sunrise/sunset), and day.

All Project Building Lighting in the 2018 Project is limited as follows, pursuant to state regulations:

- Building Lighting fixtures will be located and aimed to limit light trespass illuminance to less than 0.74 fc at adjacent residential property lines.
- Building Lighting must comply with the requirements of 2016 CEC California Green Building Standards Code Section 5.106.8, including the backlight, uplight and glare requirements which limit brightness of luminaires and prevents light spill and light pollution.

### **B. 2018 Updated Lighting Study for a Revised Sign Lighting Plan**

A subsequent analysis dated January 16, 2018 (hereinafter referred to as Memo 1) was prepared by FKA that evaluated the updated Sign Lighting proposed by the 2018 SPA. Memo 1 was included in as Appendix M in the 2018 Final SEIR. The revised sign plan included changes to the Freeway Pylon Signage Plans and revisions to the locations for several Entry Monument signs and Project Name ID signs. Memo 1 evaluated Sign Lighting under Option A and Option B, as shown in Figures 6.6a Conceptual Sign Locations: Option A, and 6.6b Conceptual Sign Locations: Option B (attached as Appendix A and Appendix B to Memo 1). Option A would include a maximum of four freeway pylon signs and Option B would include a maximum of three freeway pylon signs.

Memo 1 analyzed the proposed increase in the quantity of visible Sign Lighting within 1000 feet of residential uses that could create a potential light trespass and or glare impact, based primarily upon the proposed project by CAM Carson LLC (CAM) to develop a fashion retail outlet project within Planning Area 2 (PA2). The analysis performed under Memo 1 confirmed that "the light trespass and glare from the Project Sign Lighting and Building Lighting will not create a new source of light trespass and glare at adjacent residential properties." Memo 1 also states "While the details of the Sign Lighting within Planning Area 1 and 3 are not known today, this analysis accurately evaluates the potential for

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Project Sign Lighting to create a new source of light trespass and or glare at adjacent residential properties. The sign types, dimensions, and maximum luminance are defined by the 2018 SPA. The Project Sign locations within Planning Area 2 are identified in detail within the 2021 SPA Sign Plan (included herein as Appendix A) and are evaluated with all signs operating simultaneously at maximum luminance of 1,000 cd/m<sup>2</sup>, all white. The Project Signs will not operate in this manner in practice, and the SPA limits maximum nighttime luminance to 500 cd/m<sup>2</sup>. As such, this analysis represents a conservative evaluation of the proposed Project's Signs potential for off-site light trespass, and glare. Therefore, the results of this analysis may be applied to the future conditions within PA1 and PA3."

Memo 1 further advised Project Sign Lighting must include measures to reduce visibility from the adjacent sensitive uses or reduce luminance to below a 30:1 contrast ratio and furthermore, all Sign Lighting which exceeds the luminance limits defined by the SPA requires separate analysis.

### **C. The 2021 Project**

This Supplemental Sign and Building Lighting Study Memorandum (hereinafter referred to as Memo 2) dated October 8, 2021, evaluates the changes within the proposed 2021 Project associated with the proposed new light industrial land uses as compared to the 2018 Project. The proposed 2021 Project includes new Sign Lighting in PA3(a) and new Building Lighting within PA3(a) associated with the proposed new light industrial land uses and a third concept (Option C) for the freeway pylon Sign Lighting proposed for the I-405 Freeway Frontage Embankment lot.

The 2021 Project proposes changes to the allowed 2018 SPA's proposed building massing size, location, and quantity within PA3(a) in comparison to what was studied under the 2017 Lighting Study and Memo 1. In addition, Memo 2 evaluates another option of freeway pylon Sign Lighting in the I-405 freeway frontage Embankment lot (Option C), which include revisions to the freeway billboard locations, dimensions, and luminance. This Memo 2 does not include a quantitative analysis of Sign Lighting proposed within PA3(b) (the Carson Country Mart) as no specific sign lighting concept/program has been prepared as yet. Appendix A of this Memo 2 shows the 2021 Project revised sign information, which is summarized as follows:

- Revised freeway sign size and locations upon the Embankment Lot (Option C).
- Revised quantity of Project Name ID signs in PA3(a) from 4 to 2.
- Revised quantity of Wall Mounted Project ID signs from 0 in PA3 to 7 in PA3(a).

The size and location of the Wall Mounted Project ID signs in PA3(b) are not specified in the Conceptual Sign Locations: Option C, which is provided in Appendix A, and therefore, Sign Lighting within PA3(b) are not analyzed in this Memo 2 and are subject to further review when defined as part of the comprehensive sign program that is required by the Specific Plan.



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Appendix A of this Memo 2 shows the 2021 Project Sign Lighting within PA3(a) and the I-405 Freeway frontage Embankment lot. Appendix B of this Memo 2 shows the 2021 Project revised Building Lighting within PA3(a).

#### **D. Analysis of 2021 Project**

##### **1. Project Sign Lighting Analysis**

The analysis provided in this Memo 2 uses the same methodology described in detail in the 2017 Lighting Study and used in Memo 1 as well. In addition, the thresholds of significance used in the 2017 Lighting Study and Memo 1, set forth above, are used to determine the potential for light and glare impacts from the 2021 Project revised Sign Lighting and Building Lighting. The analysis of the 2021 Project Sign Lighting includes evaluation of the illuminance light trespass from the Property at the Property line adjacent to residential properties, and an evaluation of glare from the 2021 Project Sign Lighting visible at residential properties or at freeway locations. The figure in Appendix A of this Memo 2 shows the revised sign locations for the freeway pylon signs in Option C as well as the locations for the Project Name ID signs and Wall Mounted Project ID signs in PA3(a).

##### **– 2021 Project Sign Lighting Trespass Illuminance**

The 2017 Lighting Study described above in Section A. evaluated light trespass illuminance at sensitive use properties adjacent to the Property from the proposed Sign Lighting within the 2018 Project. The calculated light trespass illuminance is presented below in Table 1, 2017 Sign Illuminance (fc) – Calculated at Vertical Planes Where Lighting Is under Review. Vertical calculation plan locations are shown in Figure 3 below.

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**Table 1: 2017 Sign Illuminance (fc) – Calculated at Vertical Planes Where Lighting Is under Review**

Vertical Plane	Description	Illuminance			Analysis
		Vertical fc			
		Max	Min	Average	
VP1	North of the Property at the centerline of Del Amo Boulevard	0.70	0.00	0.25	Below Threshold
VP2	Northeast Project Property Line I405 Freeway	99.00	0.00	2.49	Above Threshold
VP3	East Project Property Line Avalon Blvd Ramp	6.10	0.20	0.90	Above Threshold
VP4	South Project Property Line	0.40	0.00	0.13	Below Threshold

SOURCE: 2017 Lighting Study, Table 4.



**Figure 3 Illuminance Calculation Vertical Planes**

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As shown in Table 1, the 2017 Lighting Study concluded there was no light trespass illuminance impact at residential use properties adjacent to the Property or other sensitive receptor properties. The calculated illuminance at vertical plane VP1 to the north of the Property at Del Amo Boulevard and at vertical plane VP4 at the south Property line is less than 0.74 fc. The light trespass at vertical plane VP2 at the northeast Property line I-405, and at vertical plane VP3 at Avalon Boulevard Ramp is greater than 0.74 foot-candle (fc). However, VP2 and VP3 are not adjacent to residential use or sensitive use properties. Therefore, although the light trespass illuminance is greater than the 0.74 fc threshold, there is no impact at VP2 or VP3.

The 2021 Project is analyzed using the same methodology as described in the 2017 Lighting Study. The methodology was established in the 2017 Lighting Study for the 2018 Project evaluated in the 2018 Draft EIR; the same methodology was used for the 2018 Final EIR (as provided in Memo 1) and is repeated for the 2021 Draft SEIR (as provided in this Memo 2).

As indicated previously, the 2021 Project includes revised Sign Lighting information as shown in Appendix A, attached hereto:

- Revised freeway sign size and locations within the Embankment Lot.
- Revised quantity of Project Name ID signs in PA3(a) from 4 to 2.
- Revised quantity of Wall Mounted Project ID signs from 0 in PA3 to 7 in PA3(a).

As indicated above, the Sign Lighting analysis evaluates the revised locations of the freeway pylon signs, the Project Name ID signs and Wall Mounted ID signs in PA3(a). However, the analysis of light trespass illuminance from future Wall Mounted Project ID Sign Lighting in PA3(b) is not included in this Memo 2 because sign types and locations are speculative at this time. All proposed future Sign Lighting located within PA3(b) must comply with the Mitigation Measures B-2, B-3, and B-5 identified in 2017 Study as summarized below, and shall require future approval from the City as part of a comprehensive sign program based upon a new light trespass illuminance analysis, which must include a comprehensive study of any and all proposed Sign Lighting within PA3(b).

- **Mitigation Measure B-2:** The distribution, placement, and orientation of signs along the I-405 Freeway shall be in substantial compliance with the signage concepts and in compliance with the sign standards in the 2021 SPA.
- **Mitigation Measure B-3:** If any portion of the illuminated surface of the sign is visible from a residential use within 1,000 feet of said sign at night, then the proposed modified Project sign luminance shall be reduced to less than 300 cd/m<sup>2</sup> at night.
- **Mitigation Measure B-5:** If any portion of the illuminated surface of the sign is visible from a residential use within 1000 ft. of said sign, sign area and/or sign luminance shall be limited so that the light trespass illuminance is less than 0.74 fc at residential property line.

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**Table 2 2021 Sign Illuminance (fc) -Calculated at Vertical Planes Where Lighting Is under Review**

Vertical Plane	Description	Illuminance			Analysis	Result
		Vertical fc				
		Max	Min	Average		
VP1	North Project Property Line Del Amo Boulevard	0.60	0.10	0.20	Below Threshold	Not an Impact
VP2	Northeast Project Property Line 405 Freeway	138.00	0.00	4.80	Above Threshold	Not an Impact (no sensitive receptor affected)
VP3	East Project Property Line Avalon Blvd Ramp	6.80	0.30	0.98	Above Threshold	Not an Impact (no sensitive receptor affected)
VP4	South Project Property Line	0.40	0.00	0.17	Below Threshold	Not an Impact

The calculated illuminance for the 2021 Project Sign Lighting at vertical plane VP1 to the north of the Property at Del Amo Boulevard and at vertical plane VP4 at the southern Property line is less than 0.74 fc. The light trespass at vertical plane VP2 at the northeast Property line along I-405, and at vertical plane VP3 at Avalon Boulevard Ramp are greater than 0.74 fc. However, VP2 and VP3 are not adjacent to any residential use or sensitive use properties. Therefore, although the light trespass illuminance is greater than the 0.74 fc threshold, there is no impact at VP2 or VP3.

Thus, the proposed 2021 Project Sign Lighting as described in Appendix A, 2021 SPA Sign Plan, will not create a significant source of light trespass.

– Project Sign Lighting Glare Analysis

Glare from Sign Lighting occurs 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. As noted above on page 3, the 2017 Lighting Study analyzed glare from Sign Lighting with a maximum nighttime luminance at 1,000 candela per meters squared ( $\text{cd}/\text{m}^2$ ) and concluded that there would be a glare impact at adjacent residential properties unless the maximum luminance was reduced to  $500 \text{ cd}/\text{m}^2$ . Furthermore, the 2017 Lighting Study concluded that Mitigation Measure B-3 (Mitigation Measure B-3a in the 2018 SEIR) limiting the maximum nighttime Sign Lighting luminance to  $300 \text{ cd}/\text{m}^2$  if visible within 1000 ft of residential properties is required to prevent Sign Lighting from creating a new source of high contrast, exceeding contrast ratios of 30:1, and therefore a glare condition.

Similarly, the 2021 Project Sign Plan will incorporate the requirements in the 2021 Specific Plan Amendment (2021 SPA) that are indicated above. These include the maximum nighttime luminance of  $500 \text{ cd}/\text{m}^2$  from 45 minutes after sunset until 45 minutes prior to sunrise, and  $10,000 \text{ cd}/\text{m}^2$  during day time hours from after sunrise until sunset with a smooth daytime to nighttime transition in luminance.

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The 2017 Lighting Study analyzed glare with respect to the California Vehicle Code and found 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 2021 Project Sign Lighting will not exceed 500 cd/m<sup>2</sup>, which is less than the previously analyzed luminance of 1000 cd/m<sup>2</sup> in the 2017 Lighting Study and therefore will result in less glare to drivers than the 2018 Project Sign Lighting.

Based on the above, as was concluded in the 2017 Lighting Study and with the implementation of the requirements in the 2021 SPA and mitigation measures, the 2021 Project Sign Lighting will not result in any significant glare impacts at adjacent residential uses or roadways.

#### 2. 2021 Project Building Lighting Analysis of Parcel PA3

- Building Lighting Trespass Illuminance

The 2017 Lighting Study analyzed PA3 uses with Building Lighting as indicated in the 2018 Specific Plan. This Memo 2 evaluates the 2021 Project's proposed Building Lighting, as illustrated in Appendix B to this Memo 2, in comparison to the 2017 Lighting Study.

The 2017 Lighting Study evaluated the 2018 Project Building Lighting for light trespass illuminance at the Property line as defined in Figure 3 (see page 7 above). The 2017 Lighting Study identified the maximum calculated light trespass illuminance of 0.4 fc for PA2 at the south Property line and 0.7 fc north of the Property at the centerline of Del Amo Boulevard, which is less than the light trespass illuminance threshold of 0.74 fc. The 2017 Lighting Study indicates if PA3 included similar land use as PA2, the resulting light trespass illuminance at adjacent residential use properties would be no greater than the light trespass illuminance from PA2. Therefore, the 2017 Lighting Study concluded there is no light trespass impact from Project Building Lighting proposed by the 2018 Project. Table 3, 2017 Building Lighting Illuminance (fc) – Calculated at Vertical Planes Where Lighting Is under Review, presents a summary of calculated light trespass illuminance from the 2017 Lighting Study.

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**Table 3: 2017 Building Lighting Illuminance (fc) – Calculated at Vertical Planes Where Lighting Is under Review**

Vertical Plane	Description	Illuminance			Analysis	Result
		Vertical fc				
		Max	Min	Average		
VP1	North of the Property at the centerline of Del Amo Boulevard	0.70	0.00	0.25	Below Threshold	Not an Impact
VP2	Northeast Project Property Line 405 Freeway	99.00	0.00	2.49	Above Threshold	Not an Impact
VP3	East Project Property Line Avalon Blvd Ramp	6.10	0.20	0.90	Above Threshold	Not an Impact
VP4	South Project Property Line	0.40	0.00	0.13	Below Threshold	Not an Impact

SOURCE: 2017 Lighting Study

Furthermore, Memo 1 evaluated the 2018 Project Building Lighting and concluded “Although the Project Building Lighting elements within Planning Area 1 and 3 are not known today, all projects within California must comply with the requirements of the provisions of the 2016 California Energy Code - California Code of Regulations, Title 24, Part 6 and Part 11 (CEC), .... Therefore, the analysis presented for Planning Area 2 is consistent with the analysis of any future lighting proposed for Planning Area 1 and 3, and the conclusions stated within this Study apply for all Building and Site Lighting within the Project.”

The 2021 Project includes a specific Building Lighting program within PA3(a), as more particularly described in Appendix B, attached hereto, including revised building exterior lighting and site lighting corresponding to light industrial use buildings as set forth in the 2021 Project. The Building Lighting within PA3(a) must comply with the lighting illuminance criteria set forth in the 2018 SPA attached to the 2017 Lighting Study as Appendix A. In addition, light degrades at the inverse square of the distance, therefore, light at locations more distant from the property line will receive significantly less light than at the property line. The 2021 Project revises the land use for PA3(a) from retail use to light industrial use. The Illuminating Engineering Society of North America (IESNA) recommended illuminance for industrial is less than the recommended illuminance for retail use development. Therefore, the revised land use within PA3(a) will result in lower illuminance within PA3(a) than previously evaluated in the 2017 Lighting Study at the Project roadways, parking, pedestrian circulation areas and building entrances. The distance from PA3(a) lighting to surrounding residential use properties is equal to or greater than the distance from the Project to the surrounding residential properties analyzed in the 2017 Lighting Study. Therefore, the illuminance at adjacent residential use properties to the south and

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southwest from the 2021 Project will be less than the illuminance from the 2017 Project at distances equal to or greater than the distance in the 2017 Lighting Study. The light trespass illuminance from the 2017 Project was found to be less than the threshold of 0.74 fc by the 2017 Lighting Study. Therefore, the light trespass illuminance from the 2021 Project will be less than the 2017 Project, and also less than the threshold of 0.74fc.

The 2021 Project will create less on-site illuminance in comparison to the 2017 Project, at equal or greater distance to adjacent residential uses. Therefore, the light trespass illuminance from the revised Building Lighting within PA3(a) will be less than the illuminance from Building Lighting evaluated in the 2017 Lighting Study. Therefore, the 2021 Project's proposed Building Lighting within PA3(a) will not create a significant source of light trespass illuminance at adjacent residential properties.

As noted above, a lighting plan for the commercial and recreational uses associated with PA3(b) (the Carson Country Mart) is not proposed at this time as Sign Lighting locations and types are speculative. The Sign Lighting plan will be approved as part of a comprehensive sign program approved by the City at which time light trespass illuminance and potential impacts would be evaluated by the City pursuant to a new lighting study/analysis for PA3(b). In addition, all PA3(b) Building Lighting must comply with light trespass requirements of the California Building Code.

#### – Building Lighting Glare Analysis

All Building Lighting must comply with light trespass and glare requirements in the California Building Code. The 2017 Lighting Study explains that all Building Lighting complying with CALGreen requirements will not cause contrast ratios to exceed 30:1. The analysis of glare for the retail parcels given in the 2017 Lighting Study apply to PA3. The 2017 Lighting Study glare analysis of the Project Building Lighting concluded that there is no glare impact at adjacent residential use properties.

The 2021 Project Building Lighting within PA3(a) must comply with the requirements of CALGreen and the 2021 SPA, which stipulate the height and shielding of the lighting sources to limit glare visible from any adjacent residential use property. The distance from the 2021 Project Building Lighting locations for PA3(a) to the nearest residential use property are equal to or greater than distances analyzed in the 2017 Lighting Study. Furthermore, the lighting fixture mounting height elevations above grade as shown in Appendix B are lower than the heights evaluated by the 2017 Lighting Study. The maximum light fixture elevation in the 2018 SPA was 40 feet and is reduced to 35 feet in PA3(a) and 12 feet in PA3(b) in the 2021 SPA. The reduced light fixture mounting height will serve to reduce the visibility of the lights from locations outside of the Property in comparison to the 2017 Project. Therefore, the 2021 Project Building Lighting will comply with CALGreen which limits light source luminance to less than high contrast conditions, and the 2021 Project Building Lighting will be mounted lower than the lighting analyzed in the 2017 Lighting Study. Therefore, the 2021 Project Building Lighting will not create new source of glare at adjacent residential use properties.

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#### **E. Conclusions**

This Memo 2 analyzes the revised Sign Lighting and Building Lighting to assess possible future impacts at adjacent sensitive use properties utilizing the methods of analysis defined in the 2017 Lighting Study. This analysis indicates that light trespass and glare from the 2021 Project will not exceed the relevant thresholds as described in the 2017 Lighting Study and therefore, will not create a significant impact.

Based upon the analysis in this Memo 2, the 2021 Project Sign Lighting illuminance does not exceed 0.74 foot-candle (fc) at adjacent residential use properties or any other sensitive receptors. The 2021 Project's proposed Sign Lighting trespass illuminance is less than the threshold of 0.74 fc at adjacent residential use properties as identified by the calculations at vertical planes VP1 or VP4 (sensitive receptors). The 2021 Project Sign Lighting light trespass illuminance exceeds 0.74 fc at vertical planes VP2 and VP3. However, vertical planes VP2 and VP3 are not sensitive use locations, and therefore, there is no light trespass impact. Therefore, the 2021 Project Sign Lighting will not create a significant source of light trespass illuminance at adjacent residential properties or any other sensitive receptors surrounding the Property.

The 2021 Project's proposed Sign Lighting, including freeway pylon Sign Lighting along the I-405 freeway Embankment lot, shall be limited to a maximum nighttime brightness of 500 candela per square meter ( $\text{cd}/\text{m}^2$ ) as indicated in the 2021 Specific Plan. With the implementation of the requirement, the 2021 Project Sign Lighting will not create a contrast ratio greater than 30:1. As discussed in the 2017 Lighting Study contrast ratios less than 30:1 indicate medium contrast conditions, and no glare. Therefore, the 2021 Project Sign Lighting will not create a new significant source of glare.

All Project Sign Lighting is subject to compliance with the California Vehicle Code which restricts glare from light sources within the drivers' field of view. This Memo 2 reviewed possible glare impacts from the 2021 Project Sign Lighting to adjacent roadways by comparison to the previously evaluated 2017 Lighting Study. It was concluded that glare from the proposed 2021 Project Sign Lighting would be less than glare analyzed in the 2017 Lighting Study. Therefore, the 2021 Project Sign Lighting will not cause excessive glare to adjacent roadways as defined by the California Vehicle Code.

The 2021 Project includes new light industrial and commercial/recreational uses within PA3(a) and PA3(b), respectively, which will require less illumination than the previously studied retail/commercial uses proposed by the 2018 Project. The light trespass illuminance from PA3(a) will therefore be less than the retail/commercial use Building Lighting evaluated in the 2017 Lighting Study, which were found to have no light trespass impact. In addition, development within PA3(a) must comply with CALGreen regulations for light trespass illuminance and glare, which requires Building Lighting at the Project property line to be less than 0.74 fc including limits to glare from the Building Lighting to less than 30:1 contrast ratio. Therefore, compliance with CALGreen and since lighting for light industrial uses is less than for retail uses, Project Building Lighting within Parcel PA3(a) will have no light trespass illuminance impact on adjacent residential uses.



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Any development within PA3(b) must also comply with CALGreen requirements regarding lighting. It is assumed that with compliance with CALGreen requirements regarding lighting, Building Lighting within PA3(b) will not create a light trespass impact at residential use properties which are located at distances away from the Property line surrounding PA3(b), but such assumption will require further review and confirmation, based upon the actual Building Lighting and Sign Lighting that will be proposed and submitted to the City for PA3(b). Actual compliance with applicable CALGreen light and glare thresholds for PA3(b) must be confirmed by the City as part of its review and approval of a comprehensive sign program for the Carson Country Mart.

Sincerely,

**Francis Krahe Associates, Inc.**

Francis J. Krahe, *P.E.*

**Memo 2**  
**October 8, 2021**

APPENDIX A: 2021 SPA Sign Plan



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October 8, 2021**

**TABLE 6.4  
SIGN STANDARDS**

Sign Type <sup>a</sup>	Maximum Number	Maximum Sign Dimensions		Notes	Max. Nighttime Luminance <sup>c,d</sup>	
		Height	Width		Digital	Static
Freeway Icon Pylon, <sup>e,f,k</sup> Double Faced LED, Digital Display and Changeable Message	1	88 feet	65 feet	The supporting pylon width will be 10 to 25 feet. The 20-foot-high and 60-foot-long LED digital display board with Changeable Message Display and Color Changing Illumination will be attached to sign panels or a sign frame that will be a maximum of 25 feet high and 62 feet wide. The top of the reader board will be located no higher than 88 feet above measured I-405 Freeway elevation. Height is measured from the elevation of I-405 Freeway immediately adjacent to the sign location.  Off-site advertising may be permitted on this sign, subject to City Council approval and the obtaining of appropriate permits.	500 cd/m <sup>2</sup>	—
Freeway Icon Pylon, <sup>e,f,k</sup> Double Faced LED, Digital Display and Changeable Message	1	88 feet	48 feet	The base width will be 10 feet to 25 feet. If the base is greater than 15 feet, the sign will taper up to 15 feet at top. The sign face will be 14 feet by 48 feet LED digital or static billboard display attached to the pylon. Height is measured from the elevation of the I-405 Freeway immediately adjacent to the sign location.  Off-site advertising may be permitted on this sign, subject to City Council approval and the obtaining of appropriate permits.	500 cd/m <sup>2</sup>	500 cd/m <sup>2</sup>

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Sign Type <sup>a</sup>	Maximum Number	Maximum Sign Dimensions		Notes	Max. Nighttime Luminance <sup>c,d</sup>	
		Height	Width		Digital	Static
<b>Option A<sup>b</sup></b> Freeway Icon Pylon <sup>e,f,k</sup> Static	2	88 feet	25 feet	The base width will be 10 to 25 feet. If the base is greater than 15 feet, the sign will taper up to 15 feet at top.  Up to 6 double-sided tenant signs. Tenant signs may be 6 feet by 20 feet each. PA3 Center ID may be placed on pylon.  Height is measured from the elevation of I-405 Freeway immediately adjacent to the sign location.  Off-site advertising may be permitted on this sign, subject to City Council approval and the obtaining of appropriate permits	—	500 cd/m <sup>2</sup>
<b>Option B<sup>b</sup></b> Freeway Icon Pylon <sup>e,f,k</sup> Static or Double-Faced LED, Digital Display and Changeable Message Allowed	1	88 feet	48 feet	The base width will be 10 feet to 25 feet. If the base is greater than 15 feet, the sign will taper up to 15 feet at top. The sign face will be 14 feet by 48 feet LED digital or static billboard display attached to the pylon.  Height is measured from the elevation of the I-405 Freeway immediately adjacent to the sign location. Off-site advertising may be permitted on this sign, subject to City Council approval and the obtaining of appropriate permits.	500 cd/m <sup>2</sup>	500 cd/m <sup>2</sup>

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Sign Type <sup>a</sup>	Maximum Number	Maximum Sign Dimensions		Notes	Max. Nighttime Luminance <sup>c,d</sup>	
		Height	Width		Digital	Static
<b>Option C<sup>b</sup></b> Freeway Icon Pylon <sup>e,f,k</sup> Double-Face LED, Digital Display and Changeable Message	2	88 feet	70 feet	The supporting pylon width would be 10 to 25 feet. The size of the digital display would comply with applicable State law (currently 20 feet high and 60 feet long). The 20-foot-high x 60-foot-long LED digital display board with changeable message display and color changing illumination may be surrounded by an architectural frame no more than 10 feet to the outer dimensions of the 20-foot x 60-foot LED display face.  Off-site advertising would be permitted subject to obtaining required Caltrans permits. Signage would rotate messages at maximum allowed by the Outdoor Advertising Act.  The digital display pylon structure may contain up to six double-sided tenant signs, each 6 feet x 20 feet.	500 cd/m <sup>2</sup>	—
Project Name ID	4 – PA2 Developer	15 feet	45 feet	The design, size, and location of the sign shall be determined by the developer in the comprehensive sign program at a later date.	—	500 cd/m <sup>2</sup>
Project Name ID	3 – PA1 and PA3 Developer	15 feet	45 feet	The design, size, and location of the sign shall be determined by the developer in the comprehensive sign program at a later date.	—	500 cd/m <sup>2</sup>
Entry Monument	Up to 3 permitted – 1 at Lenardo Drive and Main St, 1 at Del Amo Blvd and Stamps Drive, and 1 at Lenardo Drive and Avalon Blvd <sup>j</sup>	38 feet	15 feet	The entry monuments are to provide identity signage for the Specific Plan Area as a whole and for the developments on each Planning Area. The design, size, and location of the signs shall be determined by the City in the Comprehensive Sign Program at a later date.	—	500 cd/m <sup>2</sup>

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Sign Type <sup>a</sup>	Maximum Number	Maximum Sign Dimensions		Notes	Max. Nighttime Luminance <sup>c,d</sup>	
		Height	Width		Digital	Static
North Del Amo Entry Element	2 – DD3 Developer	8 feet	12 feet	If the signage serves residential development, the sign dimensions shall be no greater than 6 feet high by 8 feet wide. Height is measured from the finished pad.	—	500 cd/m <sup>2</sup>
Parking Garage Signage and Commercial – Elevated Podium Wall Signage	Multiple – PA2 Developer	30 feet	300 feet	The multiple letter and graphic signs for tenant names, and static billboard display shall be allowed on parking garage and commercial – elevated podium wall area facing Freeway, Lenardo Drive, and site parking fields with 60 percent maximum wall coverage.	—	500 cd/m <sup>2</sup>
Wall Mounted Project ID Exterior <sup>g,1</sup>	2 – PA2 Developer	12 feet	330 feet	Individual illuminated sign letters located on building wall.	—	500 cd/m <sup>2</sup>
	2 – PA2 Developer	8 feet	230 feet			
	7 – PA3(a)	5 feet	8 feet			
	Multiple – PA3(b)	TBD	TBD			
Plaza Project ID Exterior (Entry SW and NW corners)	2 – PA2 Developer	10 feet	12 or 24 feet	Individual illuminated sign letters. 2 to 4 letters each location at grade level exterior plaza.	—	500 cd/m <sup>2</sup>
Wall Billboard Exterior	4 – PA2 Developer	20 feet	60 feet	Static billboards with external front illumination. Billboards allowed to extend above top of building wall. Billboards allowed to convert to digital LED display board in the future. No off-site advertising permitted.	500 cd/m <sup>2</sup>	500 cd/m <sup>2</sup>
Wall Billboard Exterior	2 – PA2 Developer	14 feet	48 feet	Static billboards with external front illumination. Billboards allowed to extend above top of building wall. No off-site advertising permitted.	—	500 cd/m <sup>2</sup>
Roof Billboard Interior	7 – PA2 Developer	10 feet	34 feet	Static billboards with external front illumination. Billboards located on roof above top of building wall. No off-site advertising permitted.	—	500 cd/m <sup>2</sup>

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**TABLE 6.4**  
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Sign Type <sup>a</sup>	Maximum Number	Maximum Sign Dimensions		Notes	Max. Nighttime Luminance <sup>c,d</sup>	
		Height	Width		Digital	Static
Wall Billboard Interior	1 – PA2 Developer	14 feet	48 feet	Static billboard with external front illumination. Billboard allowed to convert to digital LED display board in the future. No off-site advertising permitted	500 cd/m <sup>2</sup>	500 cd/m <sup>2</sup>
Integrated Identity Architectural Wall Graphic <sup>h</sup>	6 – PA2 Developer	(2) 27 feet	330 feet	Painted Project ID Name integrated into architectural wall vertical fin design.	—	—
		(1) 24 feet	265 feet			
		(1) 24 feet	235 feet			
		(1) 24 feet	220 feet			
		(1)24 feet	105 feet			

**NOTES:**

The number, area, type and location of wall-mounted business ID signs for all Planning Areas shall be determined through the approval of a comprehensive sign program for each Planning Area and/or, if applicable, a Master Sign Program. As described in Chapter 8, an increase in sign area and/or number of signs of not more than 10 percent and other than pylon signs, a relocation of sign location or an increase in sign height of not more than 10 percent is allowed with an Administrative Permit.

Except where noted for Freeway Icon Pylons set forth above, no off-site advertising shall be permitted.

<sup>a</sup> All free-standing signs may be double-sided. All digital LED signs may have color changing illumination.

<sup>b</sup> The Community Development Director shall also have the authority to select Option A, Option B, or Option C for the Freeway Icon Pylon Signs.

<sup>c</sup> If any portion of the illuminated surface of the sign is visible from a residential use within 1,000 feet of said sign at night, then the sign luminance shall be reduced to less than 300 cd/m<sup>2</sup> at night.

<sup>d</sup> If any portion of the illuminated sign surface is visible from a residential use within 1,000 feet of said sign, sign area and/or sign luminance shall be limited so that the light trespass illuminance is less than 0.74 foot-candles at said residential property line.

<sup>e</sup> Signage adjacent to the freeway will comply with applicable Caltrans standards and requirements.

<sup>f</sup> Prior to approval of any Development Plan or comprehensive sign program, the Applicant requesting approval of a Development Plan or comprehensive sign program shall conduct a view analysis to determine the exact location of the freestanding freeway-oriented signs to ensure maximum visibility and maximum usability of all freestanding signs. Every effort shall be made to preserve the visibility of the freeway-oriented wall-mounted signs for PA2.

<sup>g</sup> Wall-mounted project ID exterior signs may project above top of building wall.

<sup>h</sup> Integrated Identity Graphics/Murals are not considered signage; they are considered as architectural features, which are excluded from permitted signage area.

<sup>i</sup> Only one wall-mounted project ID exterior sign will be permitted for buildings in PA3(a) building, except where a building is shared by two tenants. PA3(b). A lighting study will be prepared at a later date to determine the size and illuminance of signs within the Carson Country Mart in accordance with CEQA.

<sup>j</sup> An additional monument sign may be constructed within the Carson Country Mart, following the preparation of a Comprehensive Sign Program, a lighting study, and the appropriate CEQA documentation.

<sup>k</sup> CRA is the owner of the Embankment Lot where all Billboard Signage shall be placed and thus, the CRA shall retain all rights to development of any signage upon the Embankment Lot, unless otherwise granted to developers of the Site pursuant to a Development Agreement approved by the City.

<sup>l</sup> One wall mounted project ID sign is assumed per PA3(a) building, except where a building is shared by two tenants.

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APPENDIX B: 2021 SPA Building and Site Lighting

CHAPTER 6. DEVELOPMENT STANDARDS

## CHAPTER 6

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### Development Standards

#### 6.7 Lighting

The lighting standards set forth herein are intended to establish a design framework to guide all future lighting improvements and meet specific lighting standards for each particular development application and type of use anticipated by the proposed development within each Planning Area. These standards herein define the scale, brightness, direction, and shielding for all lighting installations with respect to any project developed within the Specific Plan Area and are intended to restrict light intensity, minimize off-site impacts, prescribe light control methods, and limit light pole heights. Design of lighting is focused on providing comfortable spaces for people to walk and ensuring the safety of residents, visitors, shoppers, and employees. A Lighting Guideline Palette, consisting of various lighting styles, is included in Appendix B, The District at South Bay Lighting Palette.

The lighting standards and the resulting lighting improvements establish the basis for evaluation of the proposed lighting impact of this development on the surrounding community. The information presented within the lighting standards establish criteria based upon standard practices established by the Illuminating Engineering Society of North America (IESNA) for measurement and design of light sources, illuminated surfaces, and lighting systems. Furthermore, all lighting proposed by any development within the Specific Plan Area must comply with the light requirements included in the California Green Building Standards (CALGreen) Code for light trespass illuminance, which requires Building Lighting at the property line to be less than 0.74 foot-candles including limits to glare from the Building Lighting to less than 30:1 contrast ratio.

Generally, all light sources must be shielded to prevent direct view of high brightness light sources to adjacent off-site properties. The lighting standards contained herein provide for specific control of the direction of light so as to limit glare and any off-site view of glare. These controls are intended to limit the light distribution angle so that light is primarily directed down to the ground or up to a vertical surface. Special event lighting and construction lighting are exempt from these angular criteria if the light is focused to restrict any direct illumination upon adjacent residential properties.

To provide for safe illumination for vehicles and pedestrians traveling within the Specific Plan Area, pole-mounted lights will be required for roads and sidewalks. These pole-mounted lights should be placed in landscape/parkway strips instead of directly in the sidewalk pavement, when possible. To prevent direct view of these pole-mounted light sources located off-site and to reduce the overall brightness of the Specific Plan Area, the standards establish maximum heights for street and pedestrian lighting fixtures, maximum horizontal illuminance (foot-candles) at the ground level, and average to minimum uniformity ratios for light at the ground level. The lighting standards contained herein define special lighting criteria for parking areas to prevent direct view of lighting fixtures. The recommended criteria are summarized below as a table of



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measurable numerical criteria based on the various options for the allowed project development within the Specific Plan Area.

Lighting conditions and light level requirements are presented for the following: pedestrian sidewalks and walkways, perimeter and interior roadways, commercial exterior, office exterior, light industrial exterior, residential exterior, at-grade parking, parking structures/parking under raised podiums, Carson Country Mart, and landscape illumination. Design performance standards are established for each of the above-mentioned components by the following issues and their listed measurable criteria:

- **Light level requirements:** Task illuminance (foot-candles)
- **Light control methods:** Glare/light distribution (luminaire photometrics)
- **Visibility:** Pole height limits (section diagram)
- **Design style or character:** Luminaire and pole characteristics, pattern of light, and color of light

As described in Chapter 8, *Implementation*, two sets of lighting plans are to be drawn, stamped, and signed by a licensed lighting consultant and submitted and approved by the Community Development Director prior to the issuance of any building permits.

### 6.7.1 Light Level Requirements

The residential, commercial/retail, light industrial, and publicly accessible private open space uses of the 2021 Amendment will include activities at night, which will require illumination for vehicular and pedestrian access, advertising, and on-site tasks or functions such as deliveries and truck loading. Each of these activities has a defined light level requirement (illuminance, measured in foot-candles) as well as unique color, brightness, pattern, and architectural features. Low-pressure and high-pressure sodium lamps will not be considered for design purposes within these standards. To provide for more aesthetically pleasing environmental conditions, the use of low-pressure and high-pressure sodium lamps is not permitted due to their low correlated color temperature, particularly less than 2,100 Kelvin.

**Table 6.5** summarizes light intensity levels (illuminance, foot-candles) recommended by the IESNA for safe operation of vehicles and pedestrian security. Future lighting improvements should meet or exceed these minimum standards to provide adequate light for the Specific Plan Area for public access and safety. These standards are the recommended average maintained horizontal illuminance values for each specified use within the Specific Plan Area. As used below, “entrances” refers to entrance areas where lighting is required for entrance identification and “egress lighting” applies to areas where lighting is required for safe path of travel.

#### Pedestrian Sidewalks and Walkways

The lighting for pedestrian sidewalks and bikeways shall be to a level that increases pathway visibility and safety of pedestrians and bicyclists. For the purposes of these standards and guidelines, “Intermediate”<sup>1</sup> refers to medium-size residential and business developments with frequent moderately heavy nighttime pedestrian

<sup>1</sup> “Intermediate” shall mean that portion of the City which is within the zone of influence of a business or industrial development, often characterized by a moderately heavy nighttime pedestrian traffic and a somewhat lower parking turnover than is found in a commercial area. This definition includes densely developed apartment areas, hospitals, public libraries, and neighborhood recreational centers. Classifications conform to terminology found in typical street lighting design guidelines and standards

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“Entrances,” as shown in Table 6.5, refers to entrances that are unoccupied at nighttime, requiring lighting for entrance identification. Egress lighting shall be provided at a level that provides security and safe egress.

#### **Light Industrial Exterior**

The lighting for the exterior of light industrial buildings and outdoor spaces within PA3(a) shall be to a level that provides sufficient security and egress. Light industrial uses will be operational 24 hours per day, 7 days per week. To ensure that this activity does not negatively affect residential uses across the Torrance Lateral, light spillage from the light industrial facilities within PA3(a), including lighting at loading docks, must comply with the Carson Municipal Code Section 9162.53, which requires that lighting be shielded and directed away from nearby residential properties and streets, as well as the CALGreen BUG and light trespass lighting standards, which limit glare and light trespass. Light fixtures that would be implemented within PA3(a) in the light industrial areas are shown in Appendix B, Lighting Palette.

#### **Residential Exterior**

The lighting for the exterior of residential buildings and outdoor spaces shall be to a level that provides security and safe egress. If part of a mixed-use building, then the commercial exterior criteria, as shown in Table 6.5, can be applied to residential uses instead.

#### **At-Grade Parking**

The lighting for at-grade parking lots shall be to a level that provides safe movement of vehicles and pedestrians, and the security and safety of customers and employees, as approved by the Los Angeles County Sheriff's Department. Lighting fixtures for parking lots shall be equipped with spill control and/or with full cutoff capability at light poles at property perimeter with no cut-off at parking field interior poles. Lighting fixture standard height shall not be in excess of what is necessary to meet with recommended minimum illuminance levels identified in Table 6.5.

#### **Parking Structures/Parking under Raised Podiums**

The lighting for parking structures and parking under raised podiums shall be provided at a level that enhances pedestrian safety and visibility; however, lighting of off-street parking areas shall be directed away from nearby residential properties and streets to avoid creation of light trespass nuisances or impacts. These recommended values should apply to those parking structures used by apartment building and/or commercial developments.

#### **Carson Country Mart/Publicly Accessible Private Open Space**

Lighting within the Carson Country Mart area shall comply with the Carson Municipal Code Section 9162.53, which requires that lighting be directed away from nearby residential properties and streets as well as shielded to limit light spillover, as well as the CALGreen Code, which requires that Building Lighting at the Project property line be less than 0.74 foot-candles including limits to glare from the Building Lighting to less than 30:1 contrast ratio. Actual lighting plans within PA3(b) have not yet been proposed and a technical lighting study will be required to ensure that proposed lighting within the Carson Country Mart complies with the CALGreen requirements. Actual compliance with applicable CALGreen light and glare thresholds for PA3(b) must be confirmed by the City as part of its review and approval of a comprehensive sign program for the

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Carson Country Mart. Lighting within the Carson Country Mart will include light fixtures such as those included in Appendix B.

#### Landscape Illumination

In vertical landscape (i.e., palm and decorative trees with foliage), up-lighting illumination is encouraged.

#### 6.7.2 Light Control Methods

- A. Glare/Light Distribution: Offensive or unattractive lighting results from excessive contrast, or glare. Glare conditions usually result from highly visible lamps (light bulbs) within landscape, streetlights, parking, security, or entertainment lighting. Proper design and selection of light fixtures, mounting heights, and placement will control the visibility and perceived brightness of light sources from outside or within the Specific Plan Area and, therefore, limit the perception of glare. The lighting standards establish criteria to control the light output, mounting height, and placement of fixtures to reduce glare.
- B. All Parking and Roadway light poles from 12 to 40 feet high shall be in accordance with Section 5.106.8 of the CALGreen Code, which limits light fixture brightness adjacent to the property line of the Specific Plan Area.
- C. Pole Height Limits: Light pole height limits are established to prevent light trespass from the Specific Plan Area onto adjacent properties. These height restrictions will not eliminate complete visibility of the pole itself. Height restrictions in combination with the shielding and glare control restrictions will decrease visibility of the high brightness lamps within the pole fixtures and will prevent stray light from extending over the property line of the Specific Plan Area. Lighting shall be constructed, shielded, and directed so that adjacent residences are not impacted by light or glare coming from the Specific Plan Area.

#### 6.7.3 Site Lighting Exhibits

Lighting design exhibits as shown on **Figures 6.15 through 6.22** demonstrate conceptual lighting design for each area with intended pole locations and heights, and luminaire head orientations. Location of streetlights is subject to the approval of the City Engineer and the Community Development Director, and may be placed in either the landscape/parkways or the medians.

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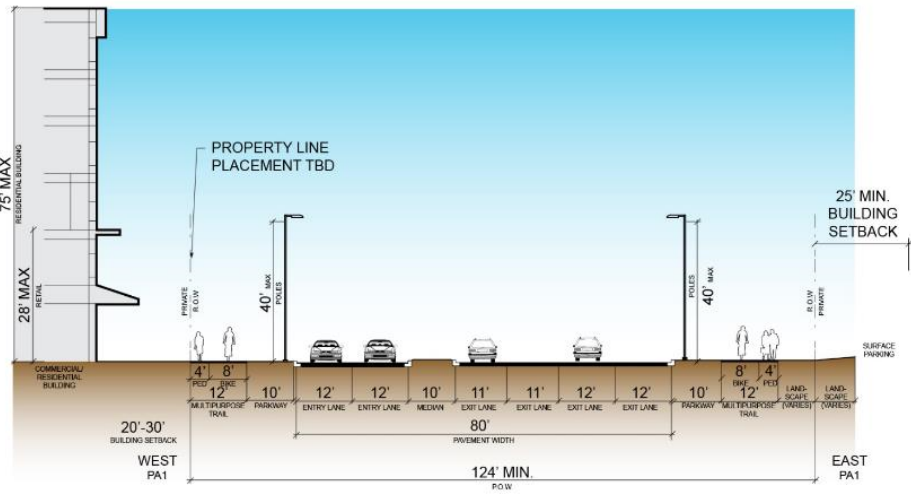


SOURCE: RGA, OJB, OU, MBI, and ESA 2021

Figure 6.15 Conceptual Site Lighting Exhibit Key Map

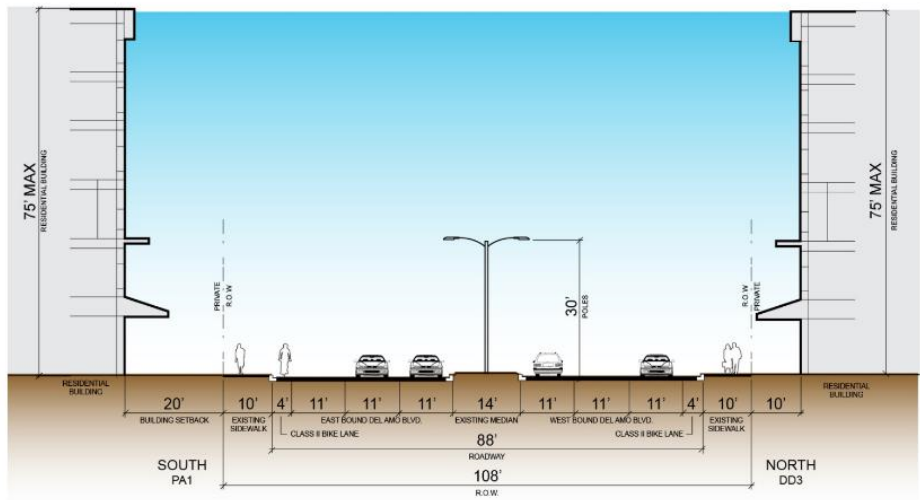
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SOURCE: RE | Solutions LLC 2017

Figure 6.16 Section A – Del Amo Entrance along Stamps Drive Lighting

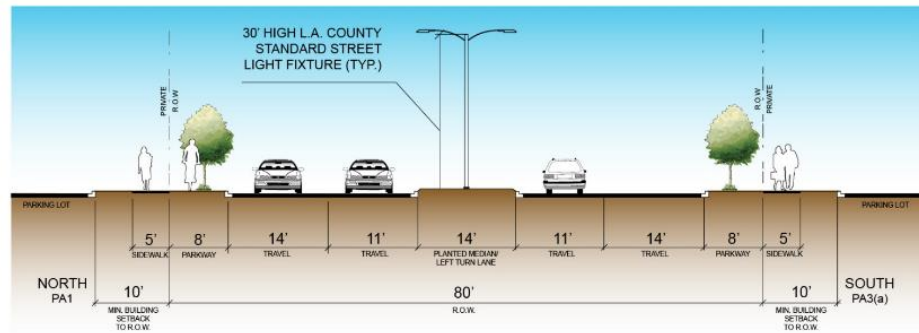


SOURCE: RE | Solutions LLC 2017

Figure 6.17 Section B – Del Amo Boulevard Lighting

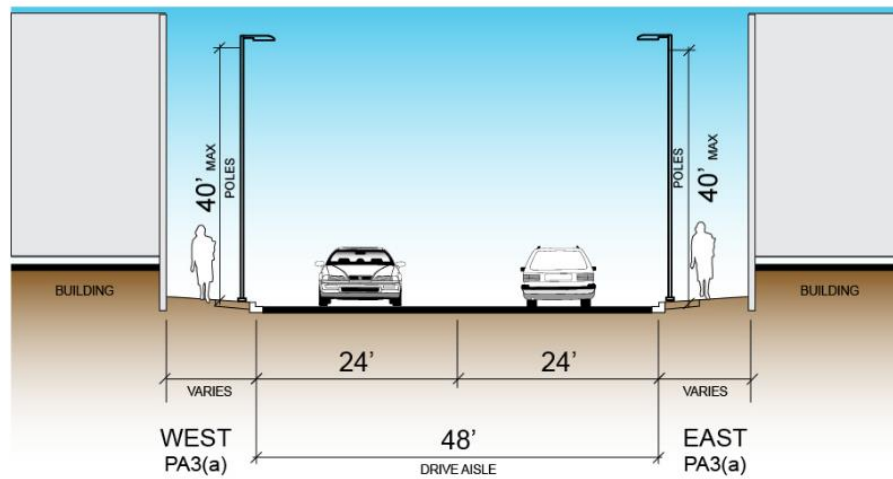
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SOURCE: RE | Solutions LLC 2017

Figure 6.18 Section C – Typical Lenardo Drive Lighting

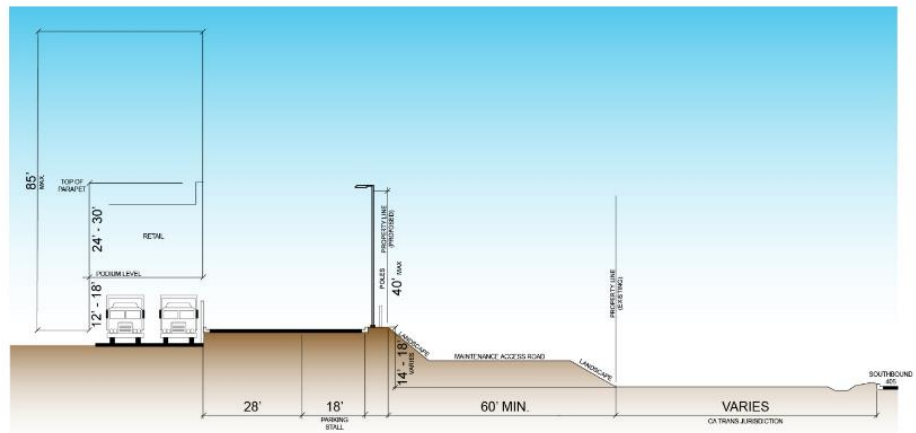


SOURCE: RE | Solutions LLC 2017

Figure 6.19 Section D – Private Drive Lighting

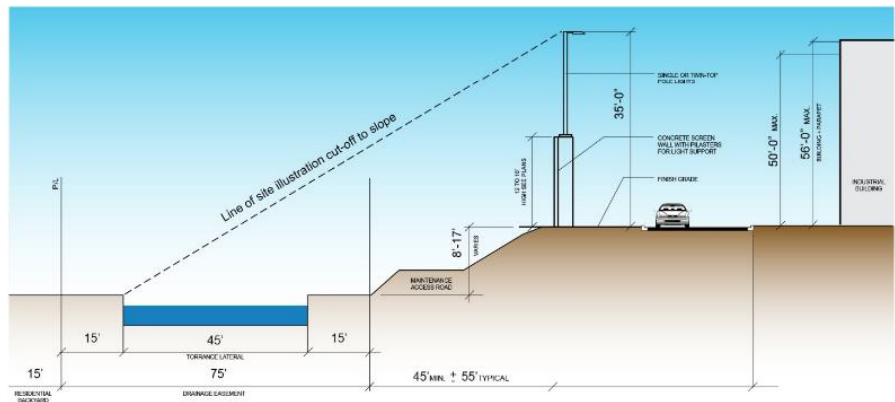
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SOURCE: RE | Solutions LLC 2017

**Figure 6.20 Section E – Freeway Edge (I-405/Specific Plan Area Interface) Lighting**

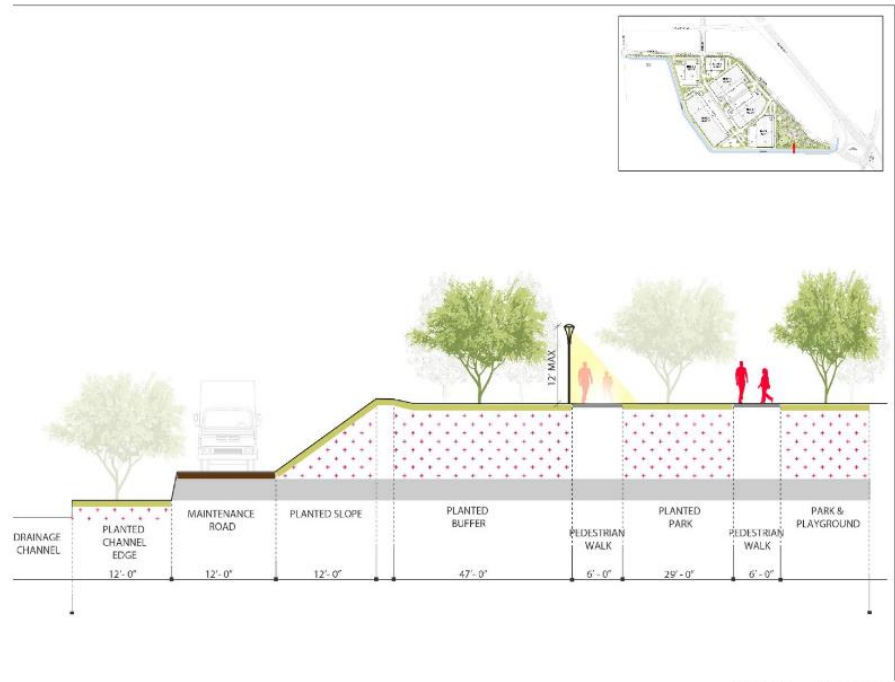


SOURCE: RE | Solutions LLC 2017

**Figure 6.21 Section F – Light Industrial Buildings A and F Loading Dock Lighting**

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SOURCE: OJB, OU 2021

Figure 6.22 Section G – Carson Country Mart Lighting



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## ***APPENDIX B2   SHADE/SHADOW FIGURES***

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This appendix provides the figures that show the shadows that would be cast by the 2021 Project for the winter solstice, the summer solstice, and the spring/fall equinox.





D:\160573-10 - The District SEIR Addendum\05 Graphics-GIS-Modeling\Illustrator

SOURCE: ESA, 2021

The District at South Bay

Winter Solstice Shadows





D:\160573-10 - The District SEIR Addendum\05 Graphics-GIS-Modeling\Illustrator

SOURCE: ESA, 2021

The District at South Bay

Summer Solstice Shadows





D:\160573-10 - The District SEIR Addendum\05 Graphics-GIS-Modeling\Illustrator

SOURCE: ESA, 2021

The District at South Bay

Equinox Shadows



