

Draft EIR Appendix B.2

Lighting Study Supplemental Analysis





The Bradbury Building
304 South Broadway, Suite 300
Los Angeles, CA 90013

+1 213 617 0477
fkaild.com

MEMO

Date: November 14, 2022
To: Stephanie Eyestone Jones
From: Jacob Graige
Project: Metro TCN - Lighting Study Corrections & Additions
CC: Ashley Wright, Francis Krahe

A. Introduction

This lighting memo dated November 11, 2022 (“Memo”) provides corrections and additions to the previously issued Lighting Study of proposed Metro TCN signs dated August 31, 2022 (“Study”). The corrections and additions included herein are as follows:

- Corrections to Study Appendix B, Sector 1 diagram page 5, Signs FF-22 and FF-24. The Study diagram illustrates these Signs as single-face. The Signs are double-face and have been corrected to appear as such in the revised diagram.
- Further analysis of Signs FF-29 and FF-30 to incorporate more precise locations and orientation and shielding within the Signs. Louvers are added to each face of both Signs. Sign FF-29 orientation is more precisely analyzed at 12.5 degree rotation north toward the Marina Freeway, and Sign FF-30 is located more precisely approximately 25 feet to the north. The light trespass illuminance calculation has been revised in this Memo to analyze the Signs with more precise location, orientation, and shielding. The Study Appendix B, Sector 33 diagram page 37 is revised in this Memo to reflect the locations and orientation more precisely.
- Further analysis of Sign NFF-20 with precise location and orientation. The light trespass illuminance calculation has been updated in this Memo to analyze the more precise location and orientation of Sign NFF-20. The Study Appendix B, Sector 25 diagram page 29 is revised in this Memo to reflect the location and orientation of Sign NFF-20 more precisely.
- Further analysis of Sign FF-25 with respect to natural habitats within the Sepulveda Basin Wildlife Reserve and incorporation of more precise location and orientation and shielding within the Sign. Louvers are added to each face of both Sign. This Memo specifically analyzes lighting impacts to the natural habitat to the west of the Sign.

- Further analysis of Signs FF-13 and FF-14 with respect to possible future natural habitats nearby and incorporation of more precise location and orientation and shielding within the Sign. Louvers are added to each face of both sides. This Memo also adds specific analysis of lighting impacts at the possible future wildlife reserve located approximately 300 feet south of the Signs.
- Further analysis of Signs FF-06 and FF-07 with respect to the Elysian Park natural habitat approximately 540 feet from the Signs.

B. Revision to Appendix B Sector 1 Diagram page 5, Signs FF-22 and FF-24

The FF-22 and FF-24 Signs are double-face and are listed as such in Appendix A of the Study. However, the diagram in Study Appendix B Sector 1 page 5 illustrates the Signs as single-face. The diagram for Signs FF-22 and FF-24 is revised in Figure 1 below to reflect the correct sign face configuration to align with the text and analysis of the Study. No additional modifications to the Study are incurred by this correction and the glare and light trespass calculations and conclusions of the Study remain the same.



Figure 1: Revised Sector 1 Diagram – Signs FF-22 and FF-24

C. Further Analysis of Signs FF-29 and FF-30

Further analysis of Signs FF-29 and FF-30 has been performed to include more precise locations and orientation and incorporate shielding within the Signs. The FF-29 and FF-30 Signs are double-face, located at the crossing of the SR 90 freeway and Culver Blvd. The Study analyzed these Signs as oriented perpendicular to the SR 90 freeway as shown in Study Appendix B Sector 33 page 37. To the south of the Signs is the Ballona Wetlands Ecological Reserve. The Study calculated the light trespass illuminance at the wetlands from both Signs cumulatively, operating at 300 cd/m². Vertical calculation plane VP-29A in Study Table 9 of the Study corresponds to the light trespass illuminance from the Signs at the northern edge of the Ballona Wetlands. The calculation concluded that the light trespass at the Ballona Wetlands would be maximum 0.6 fc.

To reduce light trespass at the Ballona Wetlands from the Signs, louvers are added to both faces of Signs FF-29 and FF-30 to confine the light emission to a narrow cone, preventing light spill to the Ballona Wetlands. In addition, the Sign NFF-29 faces are oriented 12.5 degrees north toward the SR 90 freeway and Sign FF-30 is moved north by approximately 25 feet. The diagram of Sector 33 in Study Appendix B is revised in Figure 2 below which reflects the precise orientation and location of the Signs. Updated Table 9 is included in this Memo to reflect the light trespass illuminance at VP-29A incorporating all Sign clarifications. The result of the updated calculation is a maximum light trespass illuminance value of 0.02 fc at VP-29A as indicated in the Updated Table 9 below. The updated calculation changes the quantity of project Signs that are below 10% if the LAMC threshold (0.3 fc) from 53 to 54 out of 56 Signs. All other Sign locations and conclusion of the Study are unchanged as a result of this further analysis of Signs FF-29 and FF-30.



Figure 2: Revised Sector 33 Diagram – Signs FF-29 and FF-30

D. Further Analysis of Sign NFF-20

Further analysis of Sign NFF-20 has been performed to include more precise Sign location and orientation. Sign NFF-20 is located on the Metro property at the southwest corner of the intersection of Santa Monica Blvd. and Vermont Ave. The Study analyzes the Sign as oriented east-west, showing toward vehicular traffic traveling on Santa Monica Blvd as shown in Study Appendix B Sector 25 diagram page 29. The Sign location and orientation configuration is more precisely analyzed in this Memo. The NFF-20 Sign location is more precisely located to align the side of the Sign with the Metro property's eastern boundary and rotated 90 degrees to show toward traffic along Vermont Ave. Figure 3 below reflects the precise NFF-20 sign location and orientation. In addition to the revised diagram, this Memo updates the light trespass illuminance calculation to reflect the NFF-20 Sign configuration. The Updated Table 9 below shows the revised light trespass illuminance values at VP-20A, which indicates a maximum of 0.6 fc. The updated light trespass calculation results of NFF-20 changes the quantity of project Signs that are below the CALGreen threshold (0.74 fc) from 55 to 56

out of 56 Signs. All other Sign locations and conclusion of the Study are unchanged with this further analysis of Sign NFF-20.



Figure 3: Revised Sector 25 Diagram – Sign NFF-20

E. Further Analysis of Sign FF-25

Sign FF-25 is located approximately 150 feet east of a protected natural habitat within the Sepulveda Natural Wildlife Reserve. The Sign faces of FF-25 are oriented perpendicular to the protected natural habitat and towards the I-405 freeway and include louvers to prevent light spill. At 150 feet, the FF-25 Sign location is further from the adjacent natural habitat than the previously studied FF-29 and FF-30 locations and has similar sign face orientation and louvers. Therefore, with identical sign face orientation, louvers, and further distance, the FF-25 Sign will create less light trespass illuminance than the FF-29 and FF-30 Signs (0.02 fc). This light trespass value is less than the most conservative threshold of 0.09 fc that can be applied to a natural habitat in LZ3, and therefore will not create a significant impact at the sensitive habitat area to the west.

F. Further Analysis of Signs FF-13 and FF-14

Signs FF-13 and FF-14 are located approximately 300 feet away from a possible future wildlife reserve. The FF-13 and FF-14 Signs are double-face oriented perpendicular to or away from the future wildlife reserve and towards the SR 2 freeway. Sign FF-13 and FF-14 faces include louvers to prevent light spill to adjacent sensitive uses. At 300 feet, the FF-13 and FF-14 Sign locations are farther from the adjacent sensitive habitat than the Signs FF-29 and FF-30 studied in this Memo above and have similar sign face orientation and louvers. Therefore, with identical sign face orientation, louvers, and farther distances, the FF-13 and FF-14 Signs will create less light trespass illuminance than the FF-29 and FF-30 Signs (0.02 fc). This light trespass value is less than the most conservative threshold of 0.09 fc that can be applied to a natural habitat in LZ3, and therefore will not create a significant impact at the future wildlife reserve to the south.

G. Further Analysis of Signs FF-06 and FF-07

Signs FF-06 and FF-07 are located approximately 540 feet away from the Elysian Park natural habitat. The Inverse Square Law (see Lighting Study Section C) explains the exponential relationship between illuminance and distance. As given in the Lighting Study Table 7: Project Sign Maximum Light Trespass Illuminance, the light trespass degrades from Signs with dimensions 14 feet by 48 feet such as FF-06 and FF-07 to 0.3 fc at 270 feet away from signs FF-06 and FF-07. Using the Inverse Square Law, it can be calculated that the illuminance from Signs FF-06 and FF-07 at 540 feet away would degrade to 25% of the illuminance at 270 feet away, which is equivalent to 0.075 fc. The light trespass illuminance value of 0.075 fc is less than even the most conservative threshold of 0.09 fc that can be applied to a natural habitat in LZ3. Therefore, the light trespass illuminance from Signs FF-06 and FF-07 will not create a significant impact at the Elysian Park natural habitat.

Updated Table 9: Sign Light Trespass Illuminance (fc)

Sign	Sector Map (See Study Appendix B)	Vertical Plane	Illuminance (fc)	LAMC Analysis (3.0 fc threshold)
			Max Vertical	
FF-13	10	VP-13A	0.30	Less than threshold
FF-26	27	VP-26A	0.20	Less than threshold
FF-28	28	VP-28A	0.10	Less than threshold
	28	VP-28B	0.20	Less than threshold
FF-29 & FF-30	33	VP-29A	<u>0.02</u>	Less than threshold
FF-33	31	VP-33A	0.10	Less than threshold
	31	VP-33B	0.10	Less than threshold
FF-34	31	VP-34A	0.50	Less than threshold
	31	VP-34B	0.20	Less than threshold
NFF-14	27	VP-14A	0.00	Less than threshold
NFF-15	27	VP-15A	0.10	Less than threshold
NFF-20	25	VP-20A	<u>0.60</u>	Less than threshold

H. Conclusions

This Memo presents all corrections and additions to the Study related to light trespass and glare. The Study previously issued by Francis Krahe & Associates concluded that there will be no light trespass or glare impacts from the proposed Metro TCN Signs. As stated in Section B above, the correction to Study Appendix B, Sector 1 diagram page 5 does not effect the conclusions of the Study. Further analysis of Signs FF-29, FF-30, and NFF-20 results in less light trespass illuminance than the previous Sign configurations analyzed in the Study. Further analysis of Signs FF-06, FF-07, FF-13, FF-14, and FF-25 with respect to adjacent natural habitats confirms no significant impacts at even the most conservative threshold that can be applied to natural habitats. Therefore, the corrections and additions to the Metro TCN Signs contained in this Memo will not result a significant impact with respect to light trespass and glare.

Sincerely,

Francis Krahe Associates, Inc.

Jacob Graige, Senior Designer