Draft EIR Appendix K.2

Transportation and Traffic Safety Supplemental Analysis

APPENDIX A

SUPPLEMENTAL TRANSPORTATION REVIEW FOR THE METRO TRANSPORTATION COMMUNICATION NETWORK PROGRAM

The Draft Environmental Impact Report (EIR) addressed traffic and transportation in Section IV.K, Transportation, and is based on the Transportation and Traffic Safety Review for the Metro TCN Program Memorandum (Transportation Memo) prepared by Gibson Transportation Consulting, Inc. (GTC) on August 29, 2022, and included in Appendix K of the Draft EIR. Although the analyses and findings in the Transportation Memorandum were presented in the Draft EIR, this Appendix was prepared to provide further clarifications and information in response to comments and questions received related to transportation, including California Environmental Quality Act (CEQA) Guidelines Appendix G, City of Los Angeles Vision Zero program, a review of the state and local guidelines for identifying potential hazards to traffic safety, and a review of other additional research studies related to digital billboards.

As noted in Section 15151, Standards for Adequacy of an EIR in the CEQA Guidelines: "An EIR should be prepared with sufficient degree of analysis to provide the decision-makers with information that enables them to make a decision that intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfections but for adequacy, completeness, and a good faith effort at full disclosure."

CEQA ANALYSIS

A number of comments received were related to traffic, including the CEQA evaluation and significance thresholds.

Thresholds of Significance

In accordance with State CEQA Guidelines Appendix G, the Project would have a significant transportation/traffic if it would:

- Threshold (a): Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities; or
- Threshold (b): Conflict or be inconsistent with CEQA Guidelines Section 15064.3 subdivision (b);
- Threshold (c): Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Threshold (d): Result in inadequate emergency access.

The thresholds were reviewed and analyzed, as detailed below.

Impact Analysis

Threshold (a): Would the Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Based on CEQA Guidelines Threshold (a), a review of the Project's potential to conflict with the plans, programs, ordinance, and policies on a state, regional and local level were assessed in Section IV.K, Transportation of the Draft EIR. In accordance with the transportation guidelines, including the Los Angeles Department of Transportation (LADOT) Transportation Analysis Guidelines (TAG), a project that generally conforms with, and does not obstruct the City's development policies and standards will generally be consistent.

One of the local programs reviewed in the Draft EIR and Transportation Memo included the Vision Zero Program. The Vision Zero Program, implemented by LADOT, represents a citywide effort to eliminate traffic deaths in the City by 2025. In order to achieve these goals, LADOT has identified a network of streets, called the High Injury Network (HIN), which has a higher incidence of severe and fatal collisions. The HIN, which was last updated in 2018, represents 6% of the City's street miles but accounts for approximately two thirds (64%) of all fatalities and serious injury collisions involving people walking and biking.

16 of the 22 proposed non-freeway facing TCN Structures would be located adjacent to a street on the HIN. However, as noted in the Draft EIR, the TCN Structures would be located outside the public right-of-way. Therefore, the TCN structures would not preclude LADOT from installing Vision Zero improvements, such as installing curb extensions, speed feedback signage, high visibility pedestrian crossings, lane reductions/narrowing, within the public right-of-way to improve pedestrian visibility and safety for all road users. Therefore, the Project would not conflict with the City's Vision Zero program and impacts with regard to the consistency with adopted plans, programs, ordinances and policies regarding the circulation system were determined to be less than significant.

Threshold (b). Would the Project conflict or be inconsistent with CEQA Guidelines Section 1564.3, subdivision (b)?

Several comments received on the Draft EIR requested additional evaluation of potential impacts related to vehicular traffic flow and delay. California State Senate Bill 743 (Steinberg, 2013) (SB 743), made effective in January 2014, required the Governor's Office of Planning and Research (OPR) to change the CEQA guidelines regarding the analysis of transportation impacts to shift from driver/vehicular delay (level of service [LOS]) to vehicle miles traveled (VMT) in order to reduce greenhouse gas emissions (GHG), create multimodal networks, and promote mixed-use developments. Therefore, changes to driver delay are no longer applicable to identify transportation-related significant impacts under CEQA and were not required to be studied.

The Project would not result in an increase in the number of trips and, therefore, would result in no increase in VMT. Therefore, VMT impacts would be determined to be less than significant and mitigation measures would not be required.

Threshold (c). Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)

Consistent with State CEQA Guidelines Appendix G, a significant impact would occur if the project proposes new driveways, or introduces new vehicle access to the property from the public right-

of-way; or proposes to or is required to make any voluntary or required modifications to the public right-of-way, or substantially increases hazards due to geometric design features.

The project does not propose any new roads, driveways, intersections, bikeways, trails, sidewalks, crosswalks or improvements to these facilities that may lead to an increase in areas for potential vehicle, pedestrian and/or bicycle conflicts. The Project elements would be located so as to maintain/meet ADA accessibility requirements and would not create obstacles that would be considered hazardous to pedestrians or bicyclists. However, the potential for visual distraction due to the Project is considered in terms of their potential to create traffic hazards. LAMC Section 14.4.5 addresses the identification and permitting of "hazard[s] to the safe and efficient operation of vehicles upon a street or freeway." A screening tool checklist developed by the LADOT provides a useful framework for considering potential traffic hazards, although it was not developed to augment the CEQA Appendix G Environmental Effects/Initial Study Checklist. As discussed further below, for freeway facing signs, Caltrans considers criteria related to location, size, and proximity to other signs, when considering permits related to billboards.

As discussed in the Draft EIR and Transportation Memo, the TCN Structures for freeway facing signs would meet Caltrans Outdoor Advertising Permit Requirements for digital billboards as they would not be located within 500 ft of any freeway designated as a Scenic Highway, within 500 ft of a landscaped freeway, within 500 feet an existing sign, or within 1,000 ft of an existing digital billboard on the same side of the freeway. Additionally, all TCN Structures would be located on Metro-owned property and would be equipped with Metro's Regional Integration of Intelligent Transportation Systems (RIITS), which provides comprehensive, timely, and real-time information among freeway, traffic, transit, and emergency systems across various agencies including local and regional transit agencies, to improve traffic and transportation systems, and to disseminate information regarding roadway improvements, and during emergency events. Thus, the Draft EIR concluded that the Project would be generally consistent with Caltrans guidelines for digital signage locations near freeways. Further, Caltrans issued a comment letter on the Draft EIR, concurring with the findings of the Draft EIR that the Project would be in compliance with its guidelines.

As noted above, for the non-freeway facing signs, LADOT has developed guidance for evaluating permit applications for digital billboards, which provides a framework for considering potential traffic hazards. In a memorandum titled *Suspension of Section 338 of the Manual of Policies and Procedures* (Revised) (Jaime de la Vega, General Manager, October 11, 2012), LADOT provides an evaluation checklist, titled Hazard Review for Sign Permits Evaluation Checklist, for potential hazards caused by signs and support structures. The Hazard Review for Sign Permits Evaluation Checklist is provided in Attachment A. The checklist consists of the following three questions:

1. *Would the proposed sign or sign support structure obstruct a motorist's view of any traffic control device?*

2. *Are approaching motorists faced with important decision-making tasks within 500-feet of the proposed sign location? (To make this determination, it is necessary to check if the approaching motorist is confronted with a horizontal curve, lane drop, merge or weave area, or changeable message sign.)*

3. *Is the digital billboard proposed along a street block that has a midblock pedestrian crosswalk?*

As outlined in checklist, LADOT's guidance considers several factors related to location when evaluating the permit applications for digital billboards and adjacency to a HIN alone does not preclude the installation of a sign. None of the signs or structures proposed as part of the Project would conflict with the checklist items and Metro would continue to coordinate with LADOT to ensure no potential safety hazards would arise during the installation or operation of the signs. Thus, as stated in the Draft EIR, the Project would not conflict with the City's Vision Zero program and impacts with regard to hazards would be less than significant.

Threshold (d). Would the Project result in inadequate emergency access?

With development of the Project, no alterations to the existing traffic patterns would occur. The Project does not propose to change emergency access to any of the site locations or surrounding land uses and thus would not degrade existing emergency response operations. Furthermore, one of the primary benefits of the TCN Program is to provide communication to travelers during emergency events. Therefore, impacts associated with emergency access are less than significant.

Summary

As defined above, CEQA impacts related to transportation were determined to be less than significant. Therefore, no mitigation measures were required.

ADDITIONAL LITERATURE REVIEW

Multiple comments stated that the Draft EIR did not conduct a comprehensive review of the available research on traffic safety related to digital billboards or disagreed with the conclusions of Metro's transportation experts. As stated in the Draft EIR, the research selected found that a correlation between digital billboards, or Commercial Electronic Variable Message Systems (CEVMS) and traffic collisions was "inconclusive at best." The comments cited additional studies which purportedly demonstrate the negative impacts of digital billboards on public safety and thus nullify the conclusions of the Draft EIR. Upon further review, none of the additional studies cited in the comments provide conclusive evidence that digital billboards cause traffic collisions. Nor do those studies undermine the conclusions of the Draft EIR and the studies relied on for the Draft EIR analysis.

Additional comments expressed concerns about the potential for bias in the Draft EIR's conclusions, as two of the studies cited in the Draft EIR were conducted by the Foundation for Outdoor Advertising Research and Education (FOARE). Aside from general claims of bias, none of the comments point to substantive flaws in the methodology or conclusions of these studies. Regardless, to the extent that the potential for bias exists (in studies conducted by either the advertising industry or advocacy groups opposed to digital billboards), the Draft EIR's reliance on additional independent research forecloses the argument that the conclusions therein are the result of bias. The Draft EIR's analysis relied on findings from the Federal Highway Administration (FHWA), an independent federal agency.

Importantly, while the available research does not demonstrate a correlation between digital billboards and traffic accidents, the Project would nevertheless incorporate various features to reduce driver distraction. The TCN Structures would refresh every eight seconds and would transition instantly with no motion, moving parts, flashing, or scrolling messages. The light emitted

by the displays would be adjustable throughout the day and night, and louvers would help to maintain a sharper image.

Further, as stated above, the Project would comply with all Caltrans and LADOT guidelines, which include the review of potential hazards to traffic safety.

Thus, the conclusions of the Draft EIR are valid, and Metro declines to change those conclusions in the Final EIR. The following provides a detailed review of the Draft EIR development and a review of the additional research cited in the comments received.

Draft EIR Literature Review Methodology

The purpose of the literature review was to identify research that was "specifically relevant and can inform the potential safety effects of the Metro TCN Program." Therefore, studies that do not involve similar signs or roadway conditions are not directly applicable to the Project and it is, therefore, appropriate for Metro to consider those studies as not reliable or informative in analyzing the impacts of the Project. Four criteria were utilized to narrow the scope of studies analyzed in the literature review:

1. Studies included were required to measure the relationship between digital billboards and roadway safety in order to include the most pertinent information related to the Metro TCN Program.

2. Studies included were required to be conducted in the United States. The United States has a unique set of roadway characteristics defined by the United States Department of Transportation (USDOT), state agencies (i.e., the California Department of Transportation [Caltrans]), and local governments (i.e., the Los Angeles Department of Transportation [LADOT]) through documents such as the Manual on Uniform Traffic Control Devices. While some of these characteristics may be the same or similar to those in other countries, for the purpose of consistency in roadway conditions, only studies in the United States were included.

3. Studies included were required to be conducted by a government agency or have their results published in an academic journal. Both government agencies and academic journals have rigorous standards for research that may include, but are not limited to, peer reviewed findings, feedback through a formal public engagement process, and technical expertise on the subject matter. Thus, these are verifiable and fact-based sources.

4. Studies included were required to provide the latest information available from that resource. Numerous studies on billboards and traffic safety were conducted in the late 1990s and early 2000s that have since been updated, such as the Federal Highway Administration study referenced below. Thus, only studies that provided the most current information were included in the literature review.

The traffic safety analysis in the Draft EIR focused on research conducted within the United States to ensure that only the studies most relevant to the Project were considered. In particular, this ensured that the roadway design in the studies was consistent with the standards established in the United States. Roadway design is not standardized across the globe and regulations differ across country borders. These might include, but are not limited to, lane widths, frequency and types of roadway signage, speed limits, pedestrian and bicycle infrastructure, vehicle size and

design, and countless other factors that can contribute to different driving conditions outside the United States. Utilizing studies not representative of these conditions to determine the Project's impacts would be uninformative and potentially speculative. Thus, in an attempt to control for these unknown variables, studies were limited to those based in the United States.

As stated in the Draft EIR, the traffic safety analysis did not include all of the studies conducted in this field. Instead, it identified and focused on key studies pertaining specifically to the relationship between digital billboards and traffic safety under typical driving conditions in the United States.

Federal Highway Administration (FHWA) and Foundation for Outdoor Advertising Research and Education (FOARE) Research

The Federal Highway Administration (FHWA) is the premier agency in the United States tasked with the construction, maintenance, and preservation of the country's highway system. The agency conducts hundreds of research studies pertaining specifically to highway safety and mobility and is an authority within the industry when it comes to roadway safety. This research, including the FHWA study described in Appendix K, Transportation Study of the Draft EIR, informs the policies and roadway design guidelines for state and local agencies across the United States, including Caltrans and LADOT. Thus, it is a reputable agency with a vested interest in public safety and the referenced study is considered valid within the transportation industry, despite critiques on methodology as discussed further below. This study has been utilized by other agencies such as Los Angeles Department of Public Works Bureau of Engineering in its *Initial Study and Mitigated Negative Declaration for the Sidewalk and Transit Amenities Program* published in February 2022, and by the City of San Francisco in its *Initial Study and Mitigated Negative Declaration for 345 Shaw Road and Additional Billboards Project* (2019).

As digital billboard technology has developed, the issue has been raised as to whether digital billboards themselves, regardless of compliance with operating restrictions, present a distraction to drivers and thereby create conditions that could lead to accidents. FHWA has monitored the issue closely and released its report updating the agency's view of the issues and research most recently in 2012. The FHWA reports address the basic research question of whether operation of a CEVMS along the roadway is associated with a reduction of driving safety for the public.

The reports identify three fundamental methods for answering this question: (1) whether there is an increase in crash rates in the vicinity of CEVMS, (2) whether there is an increase in near-crashes, sudden braking, sharp swerving and other such behaviors in the vicinity of CEVMS, and (3) whether there are excessive eye glances away from the roadway in the vicinity of CEVMS. The reports discuss existing literature and reports of studies, key factors and measures relating to CEVMS, and effects on traffic. An extensive bibliography is included in the reports. The reports do not purport to provide guidance to states on the control of CEVMS. The report confirms that there have been no definitive conclusions about the presence or strength of adverse safety impacts from CEVMS. Similarly, a study performed under the National Cooperative Highway Research Program (NCHRP), Project 20-7 (256) titled "Safety Impacts of the Emerging Digital Display Technology for Outdoor Advertising Signs" (NCHRP Report) reviewed existing literature. These reports agree that digital billboards should be regulated as a means of protecting the public interest.

A subsequent FHWA report confirmed through a study using an eye-tracking system that the percentage of time that drivers dedicated to the road ahead was not significantly affected by the

presence of CEVMS. Various restrictions have been that relate to the location and operation of digital billboards that seek to reduce safety concerns. These relate to brightness, message duration and message change interval, billboard location with regard to official traffic control devices, roadway geometry, vehicle maneuver requirements at interchanges (i.e., lane drops, merges and diverges), and specific constraints on the placement and operation of such signs. Regulation of operations could include, for example, the time any single message may be displayed, the time of message transition, brightness of the sign and controls that adjust brightness based on the ambient light environment, and design and placement that ensures that the sign does not confuse drivers or create dangerous glare.

Restrictions on digital billboards contained within the Outdoor Advertising Act and enforced by Caltrans regulate many of the conditions that have been identified as relevant to traffic safety. Caltrans regulates the location and size of each proposed digital billboard through its application process as well as the distance between such signs. California statutory provisions regulate brightness of displays. Through state law and the Vehicle Code, such signage would be prohibited from displaying flashing lights or images. There are various studies supporting conflicting conclusions regarding the safety of digital billboards and incidence of driver distraction. However, none have demonstrated a causal link between digital billboards and traffic collisions. The analysis in this document has been performed using state and federal published studies and adopted regulations as the best information available at this time.

Two studies authored by the Foundation for Outdoor Advertising Research and Education (FOARE) were also included as part of the Draft EIR. FOARE represents decades of experience within the advertising industry and understands the guidelines and regulations concerning traffic safety across the United States. Both studies conducted by FOARE included in the Draft EIR are available for review on Transport Research International Documentation (TRID), an integrated database that combines the records from Transportation Research Board's (TRB) Transportation Research Information Services (TRIS) database and the Organisation for Economic Co-operation and Development's (OECD) International Transport Research Documentation (ITRD) database. This database is a trusted resource within the transportation industry.

No studies on digital billboards and traffic collisions conducted specifically within the City of Los Angeles were identified that met the criteria to be considered for the literature review of the Draft EIR.

As stated in the literature review on page 6 of the Draft EIR:

> *Overall, the studies indicate that a correlation between roadway hazards and CEVMS is, at best, inconclusive. There are countless factors that can change driver attention and fixation on the road ahead, including scenery, on-site signage at local business, and other off-road distractions. Further, traffic conditions can impact the frequency and duration of driver fixation away from the road ahead.*

The research included in Appendix K, Transportation Study of the Draft EIR, did not find evidence to support the claim that digital billboards directly cause traffic collisions. As further described in this response, the additional articles provided during the public comment period similarly do not demonstrate a causal link between digital billboards and traffic collisions. Further review of the additional research studies is provided below.

Other Research Studies

The following research studies were cited in the comments received during the public comment period. A comprehensive review of these studies was conducted in preparation for the comment response to assess their consistency with the Draft EIR and the studies cited therein. Of these, the studies that are most relevant to the Project (according to the literature review criteria above and in the Draft EIR) are discussed more fully below.

- *Compendium of Recent Research Studies on Distraction from Commercial Electronic Variable Message Signs (CEVMS)*, Jerry Wachtel, CPE, President, The Veridian Group, Inc. Berkeley, California, February 2018, provides a collection of different research articles related to digital billboards collected from around the world. This study was not expanded upon further as it was updated in 2020.

- *Compendium of Recent Research Studies on Distraction from Commercial Electronic Variable Message Signs (CEVMS)*, Jerry Wachtel, CPE, President, The Veridian Group, Inc. Berkeley, California, February 2016 (October 2020 edition) ("Compendium Study"), provides a collection of different research articles related to digital billboards collected from around the world. Due to its inclusion of multiple other studies related to digital billboards and traffic safety, this study was further expanded on in the following section below.

- *Can Behavioral Interventions be too Salient? Evidence from Traffic Safety Messages*, Jonathan D. Hall and Joshua M. Madsen, Science Volume 376 Issue 6591, (April 22, 2022) ("Behavioral Interventions Study"), provides an analysis of displaying digital traffic safety messaging on Changeable Message Signs (CMS) on highways in Texas. CMS is a different type of roadway sign than the proposed TCN Structures. CMS is typically located above a roadway or immediately adjacent to a roadway, within the public right of way. These signs are generally operated by a local or state agency and are used to display text. As these signs are intended to display pertinent information to drivers, they are much closer to the roadway than standard or digital billboards. The displays may also refresh at a faster rate than digital billboards, depending on the type and length of the messaging being displayed and the posted speed limit of vehicles. Within the state of California, Caltrans regulates CMS under *Changeable Message Sign Guidelines*, Caltrans (April 2021). Under Caltrans guidelines, "the display time for a FCMS (Freeway CMS) is generally three seconds per phase." The TCN Structures proposed by the Project would be located outside of the public right of way and thus, would be located further away from the roadway than a typical CMS sign. The TCN Structures would also utilize 8.0 second refresh rates, which are over twice as long as refresh rates for CMS. Due to these differences between CMS and the TCN Structures, the findings of this study are not directly applicable to the Project. Thus, the study would not invalidate the findings of the Draft EIR. Additionally, as noted above and discussed more fully in the Draft EIR, the Project would incorporate various features to reduce driver distraction.

- *A Peer-Reviewed Critique of the Federal Highway Administration (FHWA) Report Titled: "Driver Visual Behavior in the Presence of Commercial Electronic Variable Message Signs (CEVMS)"* prepared by Jerry Wachtel, President, The Veridian Group, Inc (January 2015) ("FHWA Critique"), suggests major flaws in the methodology and preparation of the FHWA study. These purported flaws include, but are not limited to, the size of the dataset, insufficient collection of data, modifications to the study between the draft and final release of the report, the tools used in the study to measure eye tracking performance, and the selection of literature reviewed. Despite this, the FHWA Critique does not conclude that

CEVMS signs cause an increase in unsafe road conditions for drivers or other road users. The FHWA Critique merely concludes: "Given the lack of information provided by the study's authors about key details of their research, the apparent internal conflicts in critical data provided, and the problems with the experimental equipment, *a reader is unable to assess the validity of the findings as presented.*" Thus, the study would not invalidate the findings of the Draft EIR.

- *Seattle Coordinated Street Furniture Program: Human Factors Considerations*, The Veridian Group, Inc., October 2017 evaluated Seattle's proposed street kiosk installations which would include digital advertisements along sidewalks in urban areas. The kiosks evaluated in this study were proposed to be located at street level in mostly urban environments and incorporate advertising messages that would change every several seconds. The report demonstrated no correlation between the kiosks and traffic collisions. However, because the kiosks represent a fundamentally different design than the Project, this study is not particularly helpful in assessing the Project's impacts. Regardless, this study does not invalidate the Draft EIR's conclusion that there is no conclusive evidence demonstrating a link between digital billboards and traffic collisions.

- *The Acquisition of Visual Information by the Driver: Interaction of Relevant and Irrelevant Information*. Luoma J., National Highway Traffic Safety Administration; Washington, DC, USA: 1986, conducted an evaluation of driver visual cues in a driving simulator. This study did not meet the criteria for inclusion based on the age of the study and its use of a driving simulator.

- *Ads on the road: A study into the effects of perceptual load and expertise on reaction time to road signs*, Clark O.J. and Davies S.P., Proceedings of the British Psychological Society (BPS) Annual Conference; Dublin, Ireland. 2–4 April 2008, conducted an evaluation of reaction time to road signs using a driving simulator. This study did not meet the criteria for inclusion based on being conducted outside of the United States and using a driving simulator.

- *The role of roadside advertising signs in distracting drivers*. Bendak S., Al-Saleh K., Int. J. Ind. Erg. 2010, conducted research on driver distraction based on the presence of advertising signage. This study was part of the Compendium Study and did not meet the criteria for inclusion based on being conducted outside of the United States.

- *'We are killing people': How technology has made your car 'a candy store of distraction'* Mitchell, R., Los Angeles Times, July 6, 2022, discusses advances in technology available within vehicles that can create distraction for drivers. This is a newspaper article, not a research study, and thus is not reviewed further. Regardless, the article does not address billboards or collisions due to the presence of billboards and, thus, did not meet the criteria for inclusion.

Compendium Study. The Compendium Study provides an overview of 27 individual studies, including the FHWA study cited in the Draft EIR. Many of the studies cited in the Compendium Study do not consider digital billboards or fail to distinguish between the effects of digital billboards and other types of roadway signs. Because the Project specifically includes digital displays, the Draft EIR properly declined to draw speculative conclusions about the potential impacts of the digital TCN structures based on the findings of those less relevant studies. Other studies in the Compendium Study considered driver distractions from digital billboards but did not demonstrate, or even explore, a connection between those metrics and driver performance or safety. Given the

Draft EIR's specific focus on safety, and not generally on attention paid to billboards, these studies were appropriately excluded from analysis in the Draft EIR.

Of the 27 studies provided in the Compendium Study, 19 were conducted abroad. While they provide contributions to this field of research, they are not specifically representative of the road conditions present in the Unites States. The Compendium Study itself identifies the different conditions abroad as limitations to the applicability of many of these studies in the United States. Thus, as discussed above and in the Draft EIR, these studies are not directly relevant to the Project and do not undermine the Draft EIR's conclusions.

Of the remaining eight studies in the compendium, four studies utilized videos or driving simulators and asked drivers to perform tasks looking outside the vehicle while tracking their eye movement. While informative about the potential for driver distraction, these studies do not reflect typical roadway or driving conditions and do not demonstrate that digital billboards cause more collisions under typical driving conditions. Thus, these studies do not assist in analyzing the Project's potential traffic safety impacts in a real-world setting.

To the degree that studies relating to driver distractions are generally informative, the net reduction in roadway signs resulting from the Project would ultimately reduce the opportunity for driver distraction that is attributable to roadway signs.

Three additional studies listed in the Compendium Study were considered for further review, including:

- *A Field Study on the Effects of Digital Billboards on Glance Behavior During Highway Driving*. Belyusar, D., Reimer, B., Mehler, B., & Coughlin, JF. (2016). Accident Analysis and Prevention, 88, 88-96. tasked 123 drivers across different age groups and genders to drive an instrumented vehicle along a designated route past a digital billboard on a highway with a speed limit of 65 MPH. This research found statistically significant changes in the number of glances and duration of glances toward the billboard compared to sections of the roadway where the billboard was not visible. However, the author of the Compendium Study notes that only one billboard was used in this analysis and that "there could be characteristics of that sign, or its location, which make the results not generalizable to other billboards." Further, this study did not measure the relationship between glances and driver performance or compare the data to any objective metric for traffic safety. Thus, this study does not invalidate the Draft EIR's conclusion that there is no conclusive evidence demonstrating a correlation between digital billboards and traffic collisions.

- *Statistical Analysis of the Traffic Safety Impacts of On-Premise Digital Signs.* Hawkins, HG, Jr., Kuo, PF, & Lord, D. (2014). Paper No: 14-2772. Presented at the 93rd Annual Meeting of the Transportation Research Board reviewed crash frequency at 135 on-premise digital signs compared to 1,301 signs at control sites across four different states. The study found no statistically significant relationship between signs and crash frequency and that "there is no evidence [that] the installation of on-premise signs at the locations [studied] led to an automatic increase in the number of crashes." These findings were based on on-premise digital signs, rather than off-site digital signs like those proposed by the Project, and thus are not directly informative about the Project's impacts. However, this study does not invalidate the Draft EIR's conclusion that there is no conclusive evidence demonstrating a correlation between digital billboards and traffic collisions.

- *Investigation of the Potential Relationship between Crash Occurrence and the Presence of Digital Advertising Billboards in Alabama and Florida.* Sisiopiku, VP, Islam, M, Haleem, K, Alluri, P. & Gan, A. (2014). Proceedings of the Transportation Research Board (TRB) 94th Annual Meeting reviewed crash frequency at 18 digital billboard locations along major limited-access roadways in Florida and Alabama over a 3-year and 5-year period, respectively. The study found that the crash rates within "digital advertising billboard influence zones" increased 25% in Florida and 29% in Alabama compared to control sites. However, the author of the Compendium Study questions the validity of the "digital advertising billboard influence zones," which were identified utilizing imagery from Google Street View rather than by actually measuring driver sight-distance of the billboard. Further, the Compendium Study raises doubts about whether the crash data even corresponds to dates when the digital billboards were installed and operational. Given the substantial flaws in this study, and the Draft EIR's inclusion of only those studies meeting "rigorous standards for research" and that are "verifiable and fact-based," the exclusion of this study from the Draft EIR's Literature Review was appropriate. Regardless, without additional information to confirm that the study areas were appropriately selected and that billboards were present and operational during the study period, it cannot be definitively concluded that the digital billboards caused an increase in vehicle collisions. Thus, the study does not invalidate the findings of the Draft EIR.

Summary

As discussed above, none of the additional research reviewed identified a causal relationship between traffic collisions and digital billboards and none of the studies suggested that the average glance time at a roadside digital billboard was longer than the two second threshold identified in the FHWA Study. This is consistent with the findings of the Draft EIR, which states that the correlation between digital billboards and traffic collisions was found to be inconclusive. Thus, the statements and conclusions in the Draft EIR are not inconsistent with additional studies identified during the public comment period.

Attachment A

LADOT Hazard Review for Sign Permits Evaluation Checklist

CITY OF LOS ANGELES
INTRA-DEPARTMENTAL MEMORANDUM

Date: October 11, 2012

To: LADOT Executive Officers

From: Jaime de la Vega, General Manager

Subject: **SUSPENSION OF SECTION 338 OF THE MANUAL OF POLICIES AND PROCEDURES (REVISED)**

SUMMARY

This memorandum supersedes the memo on the same subject dated June 20, 2012.

Effective immediately, Section Number 338 on Advertising, Announcement and Billboard Signs in the LADOT Manual of Policies and Procedures is hereby suspended and replaced by this memo and the attached "Hazard Review for Sign Applications Permit Evaluation Checklist".

DISCUSSION

According to Section 14.4.5 of the Los Angeles Municipal Code (LAMC), a permit application for a sign or sign support structure will not be approved if the proposed sign location constitutes a "hazard to traffic to the safe and efficient operation of vehicles upon a street or freeway." The Department of Building and Safety (DBS) refers any sign permit application to LADOT for hazard evaluation and determination if the sign will be visible from and located within 500 feet of the main traveled roadway of a freeway, or if DBS determines that the sign has the potential for hazard.

The purpose of LADOT's review is to ensure that all users can safely use a roadway by assessing whether a proposed billboard would impair a motorist's attention in locations where roadway's configuration requires elevated attention or where important information needs to be conveyed to motorists via official traffic control devices, including traffic signs.

When reviewing a sign permit application, LADOT staff shall consider specific traffic safety related parameters with regard to traffic control devices, roadway geometry, and vehicle maneuver requirements. For example, signs and sign support structures should not be placed where they may distract or obstruct a motorist's view of a traffic signal or warning sign, or on a roadway requiring heightened driver awareness. Therefore, the attached checklist has been established to provide permit counter staff with a screening tool to be used when evaluating sign permit applications. This checklist replaces MPP Section 338 and now serves as the hazard determination for such signs under Section 14.4.5 of the LAMC.

This checklist shall not be applied to billboards and digital displays permitted in Supplemental Use Districts, Specific Plans, or other sign districts created by the City Council. The regulations set forth in those legislative documents shall govern sign permit applications.

JTV:tc

Attachment: Hazard Review for Sign Applications Permit Evaluation Checklist

c: Bud Ovrom, Department of Building and Safety

Hazard Review for Sign Application Permits
Evaluation Checklist

Sign Location: _____

Sign Description: _____

Under section 14.4.5 of the LAMC, the Department of Building and Safety shall refer any sign permit application to DOT for hazard evaluation and determination if the sign will be visible from and located within 500 feet of the main traveled roadway of a freeway, or if the Department of Building and Safety determines that the sign has the potential for hazard. To determine if the proposed sign or sign support structure may result in a hazard to traffic, the evaluation questions listed in the table below should be answered. **If at least one of these questions is answered "yes" then the application should not be approved.** This checklist shall not apply to billboards and digital displays permitted in Supplemental Use Districts, Specific Plans or other sign districts created by the City Council, as the regulations set forth in those legislative documents shall govern sign permit applications.

Evaluation Question	Response (yes/no)
Would the proposed sign or sign support structure obstruct a motorist's view of any traffic control device?	
Are approaching motorists faced with important decision making tasks within 500-feet of the proposed sign location? (To make this determination, it is necessary to check if the approaching motorist is confronted with a horizontal curve, lane drop, merge or weave area, or changeable message sign.)	
Is the digital billboard proposed along a street block that has a mid-block pedestrian crosswalk?	

Note: *The proposed sign and sign support structure should not be located within a driver's "visibility triangle" as defined in LAMC Sections 12.21.C7 and 62.200. However, the visibility triangle was not referenced in this checklist since this review is already conducted by the Department of Building and Safety.*

DOT Billboard Approval: Yes ____ No ____

Reviewed at DOT by: _____ Date: _____

Attachment B

Qualifications & Resumes

Gibson
transportation consulting, inc.

Gibson Transportation Consulting, Inc. (GTC) was formed in 2009 to provide the highest quality traffic engineering, transportation and mobility planning, and parking consulting services to both public and private sector clients. We offer over 250 years of collective transportation analysis experience, most of which has been gained on projects located in Southern California and across the western United States. We specialize in the preparation of the transportation and parking sections of environmental documents, neighborhood traffic management plans, bicycle and pedestrian studies, vehicle miles traveled analyses, transportation demand management plans, general and specific plans, financial pro forma analyses, and multi-modal, rideshare and transportation network company planning, and micro-transit planning. GTC also prepares detailed three-dimensional micro-simulation models based on precise roadway configurations, traffic signal phasing plans, and multi-modal flow and volume data to generate realistic system renderings in order to identify and evaluate design constraints and opportunities. We work collaboratively with multi-disciplinary teams to produce clear, logical, and comprehensive technical reports and we excel in interaction with the public and with decision-makers to explain the analyses and the mitigation programs contained in those reports. We work on a wide variety of projects that vary in size and scope and our primary goal is to effectively serve all of our clients.

GTC prepared transportation studies for some of the largest and most controversial development projects in Southern California including Hollywood Crossroads, Century City Center, Playa Vista, the NBCUniversal Evolution Plan, Bakersfield Commons, and Wilshire Grand Center. GTC is currently conducting transportation analyses for Disneyland, Hollywood Central Park, City of Hope, The Greek Theatre, Providence Hospitals, the Los Angeles County Museum of Art, and the University of Southern California at both its University Park and Health Sciences campuses, as well as studies for multiple residential, hotel, hospital, mixed-use and transit oriented developments. GTC led the transportation studies for the award-winning Memphis Aerotropolis: Airport City Master Plan in Memphis, Tennessee and we recently completed studies for the Academy Museum of Motion Pictures, the University of Redlands, Cal Poly Pomona, the LAX Northside Plan Update, and The Huntington Library, Art Collections, and Botanical Gardens.

GTC prepared the shared parking element of the award-winning Fullerton Transportation Center (FTC) Specific Plan for the City of Fullerton, and we worked with the City of Buena Park planning the traffic and parking requirements for its growing E-Zone entertainment district. Other recent projects include parking, traffic and planning studies for the Cities of Alhambra, Anaheim, Arcadia, Brea, Burbank, Cerritos, Claremont, Costa Mesa, Culver City, Downey, Irvine, Los Angeles, Manhattan Beach, Monrovia, Palmdale, Pasadena, Pomona, Roseville, San Fernando, San Marino, Santa Clarita, Santa Monica, Sierra Madre, West Hollywood, and Whittier, California; the City of Fairfax, Virginia; the Port of Los Angeles; and the California Department of Transportation.

GTC has extensive experience in event center and stadium planning and has conducted traffic and parking studies, prepared parking lot designs, and developed parking management plans for Levi's Stadium (San Francisco 49ers) in Santa Clara; Dodger Stadium, STAPLES Center, and the Los Angeles Memorial Coliseum in Los Angeles; the Rose Bowl in Pasadena; StubHub Center in Carson; The Gardens Casino in Hawaiian Gardens; Angel Stadium and the Honda Center in Anaheim; LEGOLAND California theme park in Carlsbad, California; Skypark at Santa's Village in Skyforest, California; University of Phoenix Stadium (Arizona Cardinals) and Gila River Arena (Phoenix Coyotes) in Glendale, Arizona; Arizona Stadium in Tempe, Arizona; Huangguoshu Falls in Guizhou Province, China; and the Dubai Parks and Resorts in Dubai, United Arab Emirates.

GTC is preparing, or has prepared, traffic and parking studies for Unibail-Rodamco-Westfield at its regional shopping centers at Carlsbad, Culver City, Eastland, MainPlace, North County, Promenade, Santa Anita, Topanga, University Towne Centre, Valencia Town Center, The Village at Westfield Topanga, and West Covina; for The Irvine Company at its regional shopping centers at Fashion Island, Irvine Spectrum Centre, and Tustin Marketplace, as well as its entire neighborhood shopping center portfolio; for RREEF/Jones Lang LaSalle at Manhattan Village and Villa Marina Marketplace; for Macerich at Fashion Outlets, Lakewood Center, Los Cerritos Center, Panorama Mall, Santa Monica Place, and the Westside Pavilion; for General Growth Properties at Stonestown Galleria in San Francisco and Fallbrook Center in Los Angeles; for The Citadel Outlets in Commerce; and for The Original Farmers Market in Los Angeles.

GTC is a certified Local Small Business and Local Business Enterprise with the City of Los Angeles and a Small (Micro) Business Enterprise with the State of California.

TRAFFIC ENGINEERING

parking • transportation and mobility planning • transit planning

STATEMENT OF QUALIFICATIONS

Gibson Transportation Consulting prepares detailed traffic impact and transit analyses for both public and private sector clients, including those for some of the most controversial and challenging projects in Southern California. The scopes cover traffic impact analysis, construction plans, neighborhood traffic management, site access and circulation, project alternatives, and pedestrian and bikeway planning. We work with multi-disciplinary teams, comprised of private developers, engineers, architects, planners, and public agencies, to develop effective transportation improvement and mitigation programs.

Universal Studios
Los Angeles, California

Studios & Theme Parks

Gibson Transportation Consulting is leading one of the largest traffic impact assessments in Los Angeles: the 20-year Evolution Plan for the expansion of the NBC Universal Studios property in Universal City. The project includes approximately 2.68 million sf of net new commercial development.

Gibson Transportation Consulting is also currently conducting transportation analyses for Disneyland, Paramount Pictures Studios and Skypark at Santa's Village. Previous projects include Disney's California Adventure, Downtown Disney at Disney World, LEGOLAND California, Six Flags Great America, Culver Studios, NBC Burbank studios, Burbank Media District, Empire Studios, the proposed Universal Studios Singapore, Huangguoshu Falls in Guizhou Province, China, and a seven-theme park complex in Dubai, United Arab Emirates.

Shopping Centers

Gibson Transportation Consulting staff analyzes traffic, parking design and demand, and site access and circulation planning efforts for new and expanded shopping centers throughout the United States. We are preparing, or have prepared, traffic and parking studies for Westfield LLC at its regional shopping centers at Carlsbad, Culver City, Eastland, MainPlace, North County, Santa Anita, Topanga, University Towne Centre, Valencia Town Center, the Village at Westfield Topanga, and West Covina; for The Irvine Company at its regional shopping centers at Fashion Island, Irvine Spectrum Centre, and Tustin Marketplace, as well as its entire neighborhood shopping center portfolio; for RREEF/Jones Lang LaSalle at Manhattan Village and Villa Marina Marketplace; for Macerich at Fashion Outlets, Lakewood Center, Los Cerritos Center, Panorama Mall, Santa Monica Place, and the Westside Pavilion; for General Growth Properties at Stonestown Galleria in San Francisco and Fallbrook Center in Los Angeles; and for The Original Farmers Market in Los Angeles.

Westfield Santa Anita
Arcadia, California

Transit-Oriented Developments

Gibson Transportation Consulting led the shared parking analysis of the award-winning City of Fullerton Transportation Center (FTC) Specific Plan Project and helped to develop the parking code requirements in the Specific Plan. The Specific Plan is a guide for the development of the FTC into a sustainable, mixed-use transit oriented neighborhood with housing, commercial and office space, and potentially a hotel. The mixed-use development covered approximately 16 blocks surrounding the Fullerton Transit Center and AMTRAK Station. Other transit-oriented development projects include the Metro Universal project (atop the Universal City Metro Red Line station) and the Wilshire Grand Redevelopment Project (adjacent to the 7th Street/Metro Center station) in Los Angeles. Projects have included traffic and parking analyses, transit system analyses, development of effective Transportation Demand Management programs, integration of land uses with the transit facilities, and policies and design features that promote non-auto travel.

Wilshire Grand Center
Los Angeles, California

Commercial, Residential & Mixed-Use Developments

Gibson Transportation Consulting staff prepares the transportation sections of environmental documents for commercial, residential, and mixed-use developments. Key projects include the AMPAS Academy Museum of Motion Pictures, the Huntington Library Education and Visitors Center Project, Century City Center, Bakersfield Commons, Plaza El Segundo, Westgate Pasadena, and The Collection at Riverpark in Oxnard.

Other Key Areas

Other key areas of expertise include pedestrian and bicycle safety studies; traffic, parking, access/circulation, and safety studies for schools and universities; and traffic signal systems analyses.

Gibson
transportation consulting, Inc.

Sarah M. Drobis, P.E.
Principal, Director of Planning & Engineering

EXPERIENCE

26 Years

EDUCATION

Bachelor of Engineering,
Civil Engineering and
Mathematics,
Vanderbilt University

CERTIFICATIONS

Civil Engineer,
State of California

AFFILIATIONS

Institute of
Transportation Engineers

Urban Land Institute

Women's Transportation
Seminar

Sarah Drobis has extensive experience in the traffic and transportation engineering industry, directing and conducting complex parking and transportation planning studies for a wide variety of public and private projects throughout Southern California.

Sarah has performed numerous traffic impact and parking demand studies, comprehensive mitigation programs, and site access/internal circulation reviews for retail, residential and medical development projects as well as schools, universities and churches throughout California. Her expertise also includes operational analyses, access and circulation planning for various travel modes (vehicular, pedestrian, truck, transit, etc.), transportation master planning, regional travel demand modeling, corridor studies, signal warrant analyses, development of trip generation models and traffic simulation modeling. Sarah also has extensive experience in working with elected officials, public agencies, and neighborhood stakeholder groups in developing neighborhood traffic management plans. She has also managed numerous parking studies and shared parking demand analyses for various commercial, entertainment venues, residential, institutional and mixed-use developments. Her expertise also includes development of special event traffic and parking management plans for event venues, including visitor vehicles, rideshare accommodations, and transit circulation.

Current and recent projects include studies for the Los Angeles County Museum of Art, Universal Studios Hollywood, the Academy Museum of Motion Pictures, Hollywood Central Park, The Ford Theatres, The Hollywood Bowl, Sunset Gower Studios, Crossroads Hollywood, Manhattan Village Shopping Center, Olympia, Fig + Pico, The Gardens Casino, and the University of Southern California Health Sciences Campus. In addition, she led the transportation studies for the award-winning Memphis Aerotropolis: Airport City Master Plan in Memphis, Tennessee.

After graduating from Vanderbilt University with a degree in Civil Engineering and Mathematics, Sarah began her career in Atlanta, where she assisted on traffic simulation modeling, highway and transit regional transportation demand modeling, traffic studies, development of trip generation models, and traffic data collection surveys for transportation engineering and planning projects throughout the Southeast.

David Roachford
Associate

EXPERIENCE

6 Years

EDUCATION

Bachelor of Science,
Policy Planning and Development - Sustainable Planning focus;
Minor - Spatial Studies,
University of Southern California

AFFILIATIONS

American Planning Association

Institute of Transportation Engineers

Intelligent Transportation Systems California Young Professionals Group

Board Member,
Los Angeles Walks

David Roachford has over five years of experience conducting and reviewing traffic impact and parking studies that require analysis of intersections, site access and circulation, and field data collection. He also assists with neighborhood traffic management plans and bicycle and pedestrian safety plans.

David is currently conducting transportation and parking studies for a variety of mixed-use developments and commercial centers in Burbank, Carson, Commerce, Compton, Culver City, Irvine, Santa Monica, Santa Clarita, and throughout Los Angeles. Additionally, he has reviewed traffic studies for the City of Monrovia and shared parking studies for the City of Brea. Some of his more notable projects include studies for the University of Southern California, Bergamot Station Arts Center, District NoHo, Mack Urban South Park, and Westfield Valencia Town Center.

A native Texan, David graduated from the University of Southern California with a degree in Sustainable Planning and minor in Spatial Studies. His senior thesis titled "Gentrification and Displacement in Los Angeles' Rail Transit Neighborhoods" was presented at the 2017 Urban Affairs Association Conference in Minneapolis, Minnesota.

David currently serves as a Board Member of Los Angeles Walks, a grassroots community nonprofit dedicated to making Los Angeles a more walkable and livable city.