San Diego Chapter

Serving the Environment in San Diego and Imperial Counties

July 2, 2013

Kevin Ham
Economic Development Director
City of Vista
200 Civic Center Drive
Vista, CA 92084
Fax: (760) 643-2879

Re: Public Comment on Vista Digital Message Boards Draft Mitigated Negative Declaration

Dear Mr. Ham,

The Conservation Committee of the Sierra Club, San Diego and Imperial Counties Chapter, is providing comments in the form of this letter on the Draft Initial Study/Mitigated Negative Declaration (MND) for the proposed Digital Message Boards for the City of Vista.

This project is not eligible for a Mitigated Negative Declaration (MND) and a complete Environmental Impact Report is required. The MND provided by the City of Vista does not provide the detail necessary to support the findings stated in the document. A complete EIR must be prepared to determine whether the clearly significant impacts of the proposed project can be mitigated.

CEQA Section 15073.5 requires recirculation of a negative declaration when the document must be substantially revised after public notice of its availability has previously been given, but prior to its adoption. The comments provided here identify additional mitigation measures or project revisions that must be added in order to reduce project impacts to insignificance. As such, the comments meet the "substantial revision" test and the document must be revised and recirculated for public review.

5.0 Discussion of Environmental Impacts
5.1 Aesthetics: Would the project: a) Have a substantial adverse effect on a scenic vista?

It is not possible to determine if the Project would have a substantial impact on the scenic vistas from the detail provided in the MND Document. The exact height of each sign is not specified, therefore the conclusion that the "digital message board on the University Drive Alternative 2 Site would *partially block* a small portion of the San Marcos Mountain ridgelines" cannot be substantiated. If the exact height of the blockage is not known, then the impact cannot be determined. Trees extant on the project sites will be removed or trimmed to avoid blocking the DBB. The MND notes this would "unblock" view of the San Marcos Mountain ridgelines. Removing trees and other natural components of the environment to reveal a Man Made structure cannot lessen the environmental impact of the project.

The most important aesthetic impacts from the project have been ignored. The MND completely fails to address the significant impacts to scenic vistas and all vistas from all locations where the DBBs will be visible. These areas are widespread both within and outside the City of Vista. There has been no effort to address these impacts whatsoever.

Would the project: b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?

The study acknowledges the construction of the DBBs will result in damage to trees to unblock views of the DBBs. The impact of this has not been assessed so it cannot be concluded that there is no impact.

Would the Project: c) Substantially degrade the existing visual character of the site and its surroundings?

The MND Considers only that portion of the site on which the DBB is actually constructed and located.

The impacts of these DBB will be greater than just at the site where it is constructed. These large, colorful, self lit signs with constantly changing messages are designed to actively capture and hold the attention of motorists, and people within visual range. They will draw the viewer's attention to them, thus increasing the range and depth of the impact. The MND only addresses Route 78 and immediately adjacent uses and does not adequately assess the impact of these DBB.

Further, the MND concludes "the digital message boards would be oriented to highway traffic and would not be obtrusive to adjacent uses." Orientation of the DBB towards highway traffic will not prevent them from being visible from beyond the highway.

The term “adjacent uses” is not defined, therefore, it is not possible to determine at what distance from the DBBs the impact on adjacent uses was assessed. There is no evidence in the record to support the conclusion that the DBBs will not be obtrusive to adjacent uses.

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

The MND incorrectly concludes that there would be a “Less than significant impact“ resulting from these new sources of light in the local environment.

The MND includes no assessment of actual lighting and glare that will result from these specific DBB. The MND relies only on assurances that existing codes and trade industry guidelines will result in “less than significant impact.” In order to assess the impacts of these large, colorful, self lit signs with constantly changing messages an actual analysis of the impacts must be undertaken. These DBB are designed to actively capture and hold the attention of motorists, and all people within visual range therefore, impacts of lighting and glare could be substantial. These DBB will draw the viewer’s attention to them, thus increasing the range and depth of the lighting and glare impacts.

There is a huge potential for these DBB to cause distracted driving in the motorists driving past these signs. This is not addressed in any section of the MND. Light and glare from these DBB almost assuredly will result in distracted driving which is a known safety hazard.

The MND incorrectly concludes “ that regulatory controls, however, effectively regulate light and glare to ensure that the operation of any digital message board does not create a substantial new source of light or glare” A new self lit, highly colored DBB with constantly changing messages is a new source of light and glare by definition.

Citations of codes and guidelines that may pertain to these DBBs do not constitute adequate environmental assessment of project impacts. In addition, the MND omits references to appropriate metrics to evaluate light and glare created by DBBs. The finding of less than significant impact is not based on any evidence.

The MND states the DBBs would comply with guidelines of the Outdoor Advertising Association of America (OAAA) which provide that “lighting levels on the digital message boards would not exceed 0.3 foot candles over ambient levels, as measured using a foot candle meter at a pre-set distance (250 feet) based on the size of the sign.” However, OAAA guidelines are voluntary, not mandatory, and may change at any time. Citation to nonbinding guidelines of a trade association composed of members with huge financial interests in DBBs does not constitute evidence of the

actual light that will be emitted by the specific DBBs addressed in the MND. The draft lacks any precise data on the actual light to be emitted by the DBBs and hence lacks evidence to conclude there will be a less than significant impact.

These DBB are lit by Light Emitting Diodes (LEDs) which is direct light coming from the sign to the eyes of the viewer. Traditional bill boards are illuminated by the reflected light of 2 to 3 lamps at night time and are not illuminated during the day. The quality of this direct (LED) light is different than that of the traditional signs. Distracted driving has recently been the subject of legislation to minimize its occurrence. There is no evidence in this MND to indicate that this direct light frequently highly colorful, will not pose an increased hazard to drivers. No evidence shown that the changing nature of the lighting from these DBB will not also cause an increased traffic hazard and result in increased accidents.

LEDs produce more light (in lumens per watt) than incandescent bulbs, and their efficiency is not affected by shape and size, unlike traditional fluorescent light bulbs or tubes. Traditional, static signage is illuminated by two or three lamps at nighttime, while digital signs are comprised of hundreds, if not thousands, of LED bulbs, each using between 2-10 watts, often lit twenty-four hours a day. A 14'x48' LED billboard can have between 900 and 10,000 diodes. Researchers have cited "important issues of light trespass and light pollution," associated with DBBs, "which cause distraction; obscure stars in the night sky, and, like any other form of pollution, disrupt ecosystems and cause adverse health effects for humans and wildlife alike."[1]Hereafter this publication is referred to only as "Illuminating".

The MND's claim that "The (OAAA) guidelines are based on previous outdoor lighting research that established criteria for message board luminance (glare) limits based on message board-to-viewer distances to ensure the amount of light arriving at a person's eyes are not offensive or potentially dangerous" is completely unsubstantiated. As noted, the OAAA represents a multi-billion dollar industry composed of companies whose financial interests are benefitted by owning and operating DBBs, not the interests of the public. Many people find digital billboards offensive, as evidenced by the fact numerous jurisdictions have banned them or declined to permit them at all[2]. Several studies have concluded DBBs are potentially dangerous to drivers. [3] [4] None of this is addressed in the MND. This lack of evidence leaves the conclusion unsupported by credible data.

(*Illuminating the Issues, Digital Signage and Philadelphia's Green Future*, Gregory Young, p 2 www.publicvoiceforpublicspace.org,). [1]

[2] Cities that have banned DBBs include Denver, St. Louis, San Francisco, Knoxville and most recently Ann Arbor, on June 13, 2013 . See www.scenic.org

[3] Federal Highway Administration study cites 5:1 ratio of studies finding some driver safety effects due to traditional and digital billboards. 2009. FHWA, p. 15

[4] *The Effects of Commercial Electronic Variable Message Signs on Driver Attention and Distraction: An Update.* Publication No. FHWA-HRT-09-018. February 2009. Available at http://www.fhwa.dot.gov/real_estate/cevms.pdf)

Light trespass is measured in two ways: luminance or illuminance. *Luminance* (measured in nits) quantifies surface brightness, or the amount of light an object gives off. *Illuminance* (measured in foot candles) quantifies that amount of light which falls onto an object.[5] There are two corresponding basic methods for measuring "brightness" of a digital display. The first, used in this MND, and recommended by the Outdoor Advertising Association of America (OAAA) is known as illuminance. The second, ***recommended by scientific experts***[6], [7],[8],[9], [10], and governments around the world [11], [12], is known as luminance. Despite their similar names, they utilize different measurement methods, equipment, and techniques. The method proposed in the MND is the one recommended by the outdoor advertising industry, and is inappropriate. The appropriate procedures for measuring billboard luminance have been discussed extensively in the aforecited references and are the scientifically accepted procedures that should be used in the MND. Currently, the MND omits any reference to nits - the amount of light the DBBs will give off. Because DBBs, unlike conventional billboards, emit light rather than just reflecting light that shines on them, a crucial metric for light and glare from DBBs is measured in nits, not just foot candles. Yet the MND makes no reference to nits emanating from the DBBs. The draft notes that

There are residential uses within the vicinity of the project site that would be sensitive to light. . . Due to the homes being *orientated away* from the project site and the message boards *not directly placed at a 90-degree angle to the homes*, the glare from the message boards *would not affect these residences*." There are homes located from 150 to 500 feet from the project. The people in these homes will be impacted by these signs. Houses have four sides and hence four vertical surface orientations, typically all containing windows. These homes also have yards. Light from these DBB will impinge on homes, yards and community spaces in the immediate area and in areas not described in the MND. Because these DBB are highly illuminated and change display rapidly they may impact the health of residents in the area. Property values of these residences may also be negatively affected.

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[5] *Illuminating*, p. 6., footnotes omitted.

[6] Wachtel, J. (2009). *Safety Impacts of the Emerging Digital Display Technology for Outdoor Advertising Signs.* NCHRP Report No. 20-7 (256), pg. 156-8, Washington, DC: Transportation Research Board.

[7] Lighting Research Center, Rensselaer Polytechnic Institute (RPI) (2008). *Technical Memorandum: Evaluation of Billboard Sign Luminances. Prepared for New York State Department of Transportation.*

[8] Bullough, *JD,* & Skinner, NP. (2011). *Luminance Criteria and Measurement Considerations for Light-Emitting Diode Billboards.* Paper presented at the 90th Annual Meeting of the Transportation Research Board.

[9] Luginbuhl, CB, Israel, H., Scowen, P., Polakis, J., & Polakis, T. (2010). *Digital LED Billboard Luminance Recommendations – How Bright is Bright Enough?* Flagstaff, Arizona: U.S. Naval Observatory Flagstaff Station. Draft Report.

[10] Illinois Coalition for Responsible Outdoor Lighting. (2010). *Digital Billboards: New Regulations for New Technology*. Accessed from the web at: http://www.illinoislighting.org/billboards.html

[11] *Guide to the Management of Roadside Advertising.* (2002). Edition 1.0. TERS Product No. 80.500. Brisbane, Queensland, Australia: Queensland Government, Department of Main Roads.

[12] *Repeal of Certain Regulations and Making of Regulations on Advertising on or Visible from National Roads.* (2000). The South African National Roads Agency Limited.

The MND asserts "the glare from a message board in these locations *would not affect nearby residences*" because such homes are at least *250 feet* from the DBBs? There is no data in the draft stating light from the DBBs will extend no farther than 250 feet. Indeed, the 250 foot criterion is taken directly from a study cited in the MND that was *funded by and prepared* for the OAAA [13]. Page three of this report states "This report has been prepared for the Outdoor Advertising Association of America (OAAA) under the contract issued to Lighting Sciences Inc." Both conclusions are completely unsubstantiated. The MND should include concrete data on how far light extends from the DBBs and at what strengths. The Study should be redone to re-assess the impact on nearby omes based on actual metrics.

The MND cites statistics on conventional billboard to draw conclusions about DBBs. This is not an accurate way to assess impacts of the DBB. This is like comparing the light and glare from a photograph to that from a television set or movie screen. The study admits it lacks ". . . an estimate of the actual percentage of sky glow attributable to billboards," without even noting that billboards and DBBs are completely different in their impacts. The draft gives no data on the skyglow from the proposed DBBs, which give off much more light than conventional billboards.

The draft concludes: ". . .digital billboards operating at the regulated luminance levels (not to exceed 0.3 foot candles over ambient levels) produce *much fewer lumens into the night sky than conventional bottom mountedlighting system*. This conclusion relies on the aforementioned industry funded study, which itself rejects government and engineering association accepted measures of glare and substitutes one of its own creation.

Similarly, the study's contention that "light in upward directions is reduced in comparison to light sent below the horizontal plane in the direction of viewers" allows DBBs to have less impact on night skies than conventional billboards, is directly contrary to established science.[14] Studies have found horizontal light emitted between 0° and roughly ±20°, like that from DBBs, contributes more to skyglow than light emitted at higher angles like that of conventionally lit static billboards .[15] The lower-angle lighting used on DBBs is visible over a much broader area, not a smaller area.[16] The study lacks any actual data on the skyglow impacts of the project and cites industry claims that are directly contradicted by scientific studies. The revised study must reassess impacts associated with new sources of light and glare based on

[13] (Lighting Sciences, Inc (LSI). 2006. *Digital Billboard Recommendations and Comparisons to Conventional Billboards.* November 29, 2006. Available at http://www.polcouncil.org/polc2/DigitalBillboardsIanLewin.pdf. (LSI 2006.

[14] LSI 2006 p. 6 states it used metrics not developed for DBBs.

[15] *Illuminating*, p. 8, citing Luginbuhl, C.B. (2009). *Lighting and astronomy*. Walker, C.E., and Wainscoat, R.J., Physics Today; and Carhart, D. (2010, May). *Digital billboards: New regulations for new technology*. Illinois Coalition for
Responsible Outdoor Lighting. Retrieved from http://www.illinoislighting.org/billboards.html 62:32.

[16] *Illuminating*, p. 8.

actual data, not outdoor industry funded inventions unrelated to applicable scientific standards, to determine the actual level of impact significance.

The study lacks any actual data on the skyglow impacts of the project and cites industry claims that are directly contradicted by scientific studies. The revised study must reassess impacts associated with new sources of light and glare based on actual data, not outdoor industry funded inventions unrelated to applicable scientific standards, to determine the actual level of impact significance.

5.3 Air Quality, subsections a-d

The MND lacks sufficient detail to determine project impacts. The Project will require over 525,000 kilowatts of electricity per year. The air quality impacts associated with this electricity generation is not addressed and existing air quality conditions are not described. There is insufficient data for an adequate analysis of air quality impacts.

5.4 Biological Resources: subsection a: Would the project**:** Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

The MND analysis concludes there would be less than significant impact with mitigation incorporated on special-status species known to occur historically in the vicinity of one or both sites. Also impacted would be foraging and nesting habitat for common bird species covered by the Migratory Bird Treaty Act (MBTA). The bird breeding season of many of these species is defined as January 15 to September 15. This season is nine and one-half months of the year, or almost 80 percent of each calendar year. Studies show introduction of new illumination can have a statistically significant negative influence on breeding habitat quality of species in which it was studied. [17](.) The MND does not mention light impacts on biological resources. It only addresses those impacts associated with project construction and site choices.

Most species depend on light and dark for some portion of their daily or seasonal life cycle and that increased night lighting associated with human civilization disrupts important behaviors and physiological processes with significant ecological consequences[18]. Probably the best-known effect of artificial night lighting is that many species are attracted to, and disoriented by, sources of artificial light, a

[17] *Road illumination and black-tailed godwit*, Johannes G. de Molenaar, Dick A. Jonkers and Marlies E. Sanders, presented at 2002 conference on *Ecological Consequences of Artificial Night Lighting* hosted by The Urban Wildlands Group and UCLA Institute of the Environment, available at http://www.urbanwildlands.org/conference.html. (UCLA 2002)

[18] *Ecological Consequences of Artificial Night Lighting*, Catherine Rich and Travis Longcore, 2005.

phenomenon called positive phototaxis. Birds that migrate during the night are especially affected [19].(*Green Light*) This may cause direct mortality, or may have indirect negative effects through the depletion of their energy reserves. One study concluded all evidence indicates the increasing use of artificial light at night is having an adverse effect on populations of birds, particularly those that typically migrate at night [20]. Many seabirds are nocturnal and move between land and sea at dusk or at night and as such are particularly vulnerable to artificial lighting. Once disoriented, they are at risk of colliding with built structures[21]. The revised study must assess impacts associated with new sources of light on these biological resources.

5.4 Biological Resources: subsections b and d-f:

These sections of the draft mischaracterize relevant facts and thereby reach unsupported conclusions. The description of the project site as limited to 64-square feet is inaccurate because it ignores light impacts over a much broader area, as discussed above. Because the MND acknowledges the project sites encompass habitat for special-status species and common bird species covered by the MBTA, it is inaccurate to claim that no wildlife movement occurs within the proposed project sites, or that the proposed project does not impact native vegetation, sensitive natural communities or special-status plant and wildlife species. Hence, the conclusions of no impact on these variables is intentionally inconsistent with other evidence in the draft and, are therefore unsupported. They must be reassessed.

5.4 Cultural Resources: Subsection a: Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? Subsection b: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.?

The draft concludes the project would have a no impact on a historical barn structure located next to the West Vista Way site and on a prehistoric archeological site located 700 feet from it. There is no data sited for these conclusions. No measurement of the distance from the barn to the project is even included. Nor is there any citation to authority that a DBB located 700 feet from a prehistoric archeological site has no effect upon it. As noted, DBBs tower over adjacent uses, shine bright light as much as 24 hours per day, and impact a much wider geographic area than the simple footprint of the DBBs support structure. The conclusion there will be *no impact* on these cultural resources is intentionally inconsistent with other evidence in the draft and must be reassessed.

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[19] *Green light for nocturnally migrating birds.* Poot, H., B. J. Ens, H. de Vries, M. A. H. Donners, M. R. Wernand, and J. M. Marquenie. 2008. Ecology and Society 13(2): 47, Introduction. [online] URL: http://www.ecologyandsociety.org/vol13/ iss2/art47/

[20] *Green Light,* Introduction

[21] *Artificial lighting and the decline of seabirds*, Richard Podolsky, 2002, Avian Systems, Camden, Maine 04843, presented at UCLA 2002.

5.7 Greenhouse Gas Emissions: Subsection a: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? Subsection b: Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The draft cited a County of San Diego report as having determined that a project that emits more than 2,500 MT CO2e annually during construction or operation would result in a potentially significant cumulative impact. The draft goes on to state that electricity demand for the project would be approximately 525,960 kilowatts per year for both DBBs and that the corresponding greenhouse gas emissions (GHG) resulting from this electricity demand would be approximately 374 metric tons CO2e. On this basis the draft concludes that annual GHG emissions would not exceed the 2,500 MT CO2e "threshold" during operation and therefore, impacts due to construction-related GHG emissions would be less than significant.

A conclusion of less than significant impact is flawed in multiple ways. No data is provided to explain how either the kilowatt figure or the GHG figure were calculated, neither in the draft nor Appendix A. As noted, the light intensity of the LEDs will vary depending on time of day or night and ambient conditions, yet the study claims the DBBs will consume 15 kw per hour, suggesting power usage was over time does not vary. Also, there are no specifics on how many LEDs each of the four DBB faces will contain, nor figures on how many kilowatts the unspecified number of LEDs will actually use at different times of day and night. In addition to LEDs, DBBs use electricity to run other functions including the player, cooling fans, light sensors, in some case a video extender, and possibly other features (*Illuminating*, p. 1.). The energy use of these components is not specified.

Because there is no data to back up the draft's claim its GHG emissions will be no more than 374 metric tons CO2e per year, the report must be revised to include backup data supporting this claim. The four LED DBB faces are slated to each be 48 feet wide by 14 feet tall. Studies have reported that LED DBBs of this size consume approximately 160,000 kWh per year[22], which multiplied by the four DBB faces would total at least 640,000 kwh per year or approximately 20 percent more than the study estimates. Given this huge discrepancy much more data is required in the revised MND to accurately peg the project's energy usage. Similarly, it is unclear how the study calculated the GHG associated with this electricity usage. Electricity is produced from many sources, some of which generate a much greater amount of GHGs than others. The revised environmental study must reveal how the GHG measure is calculated so it can be scrutinized for accuracy.

[22] *Illuminating*, p. 2.

5.8 Hazards and Hazardous Materials

There is a huge potential for these DBB to cause distracted driving in the motorists driving past these signs. This is not addressed in any section of the MND. The light, glare and changing messages and advertisements on these DBB assuredly will result in distracted driving which is a known safety hazard. These DBB are designed to actively capture and hold the attention of motorists therefore impacts would be substantial. These DBB will draw the viewer's attention to them, thus increasing the range and depth of the impacts. In order to assess the impacts of these large, colorful, self lit signs with constantly changing messages an actual analysis of the impacts must be undertaken.

The draft notes that "There are residential uses within the vicinity of the project site that would be sensitive to light. There are homes located from 150 to 500 feet from the project. The people in these homes will be impacted by these signs. Houses have four sides and hence four vertical surface orientations, typically all containing windows. These homes also have yards. Light from these DBB will impinge on homes, yards and community spaces in the immediate area and in areas not described in the MND. Because these DBB are highly illuminated and change display rapidly they may impact the health of residents in the area. Property values of these residences may also be negatively affected

5.10 Land Use and Planning: Subsection b: Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

On 24, May 2011 the City of Vista enacted ordinance changes regarding signs on City property, some of which were surreptitiously designed to allow for the first time, DBBs, only on City property.[23] The ordinance change made no mention of DBBs, but allowed any type of sign approved by the City Council." [24] A Negative Declaration was approved on this ordinance change, but because the statute never mentioned DBBs, the public was deprived of any opportunity to comment on the adequacy of the ND or the potential impacts of DBBs. Prior to that ordinance change, DBBs were not permitted anywhere in Vista and would have been in direct violation of applicable regulations of the City of Vista. Even now, the Development Code explicitly prohibits DBBs anywhere in Vista, other than on City property. The Development Code provides that "The City completely prohibits the construction erection use or conversion to digital or electronic display of any billboards as defined in this chapter other than the

[23] Vista Municipal Code section 12.20.130-150.
[24] Vista Municipal Code section 12.20.130-150.

maintenance of billboards which were lawfully in existence in the city on the date on which the city first adopted an ordinance prohibiting billboards…"[25]

5.13 Population and Housing

The draft notes that there are residential uses within the vicinity of the project site that would be sensitive to light. There are homes located from 150 to 500 feet from the project. The people in these homes will be impacted by these signs. Light from these DBB will impinge on homes, yards and community spaces in the immediate area and in areas not described in the MND. Because these DBB are highly illuminated and change display rapidly they may impact the health of residents in the area. Property values of these residences may also be negatively affected

5.16 Transportation/Traffic

There is a huge potential for these DBB to cause distracted driving in the motorists driving past these signs. This is not addressed in any section of the MND. The light, glare and changing messages and advertisements on these DBB assuredly will result in distracted driving which is a known safety hazard. These DBB are designed to actively capture and hold the attention of motorists therefore impacts would be substantial. These DBB will draw the viewer's attention to them, thus increasing the range and depth of the impacts. In order to assess the impacts of these large, colorful, self lit signs with constantly changing messages an actual analysis of the impacts must be undertaken.

Sincerely,

C. Mollie Bigger PHD
Chair of the Conservation Committee, Sierra Club, San Diego and Imperial County Chapter

[25] Vista Development Code section 18.52.40 E.