



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178

(909) 396-2000 • [www.aqmd.gov](http://www.aqmd.gov)

E-Mailed: November 22, 2013

[Donald.Dean@lacdc.org](mailto:Donald.Dean@lacdc.org)

November 22, 2013

Mr. Donald Dean  
Environmental Officer  
Los Angeles County Community Development Commission  
700 W. Main Street  
Alhambra, CA 91801

## **Review of the Draft Health Risk Assessment (Draft HRA) for the Proposed Residential Projects at 11714 and 11716 Compton Avenue and 11649 Antwerp Avenue**

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to comment on the above-mentioned document. We also appreciate the lead agency reaching out at an early planning stage to discuss the important air quality implications of potentially siting new housing near freeways. It is our understanding that this Draft HRA was prepared to investigate the possibility of potentially changing the lead agency's current policy of not siting new housing within 500 feet of a freeway. The comments included in this letter are meant to guide the lead agency regarding this particular Draft HRA, and to consider in a broader context in regards to policies the lead agency might consider regarding siting new housing near freeways. Technical comments regarding this HRA are attached to this letter.

Numerous health studies have demonstrated the potential adverse health effects of living near highly travelled roadways. As a result of these studies, in 2005 the California Air Resources Board recommended avoiding siting housing within 500 feet of a freeway in their Land Use Handbook.<sup>1</sup> Since that time, additional research has continued to build the case that the near roadway environment contains elevated levels of many pollutants that adversely affect human health, including some pollutants that are unregulated (e.g., ultrafine particles).

While this health science recommending against placing new homes close to freeways is clear, SCAQMD staff recognizes the many factors lead agencies must consider when siting new housing. Further, many mitigation measures have been proposed to reduce exposure, including building filtration systems, sound walls, vegetation barriers, etc. However, because of the potential health risks involved it is critical that any proposed mitigation must be carefully evaluated prior to determining that health risks would be brought below recognized significance levels.

SCAQMD staff has been investigating the effectiveness of these exposure reduction measures and recently held a technology forum on these mitigation strategies.<sup>2</sup> As discussed at this forum,

---

<sup>1</sup> California Air Resources Board. April 2005. "Air Quality and Land Use Handbook: A Community Health Perspective." Accessed at: <http://www.arb.ca.gov/ch/landuse.htm>

<sup>2</sup> Materials from this symposium will be posted here: <http://www.aqmd.gov/tao/ConferencesWorkshops/techforum.htm>

while progress has been made in developing tools to assess the effectiveness of these measures, much work remains. In addition, the state Office of Environmental Health Hazard Assessment (OEHHA) is in the process of updating their HRA guidance.<sup>3</sup> Based on updated scientific information, this guidance is expected to increase predicted health risks relative to those calculated today, even for equivalent exposures. SCAQMD staff recommends that the lead agency review these new developments to assessment methodologies prior to making any changes in policy.

Finally, the lead agency should consider the implications of the proposed mitigation for this project (enhanced filtration) on affordable housing residents. For example, in a study that SCAQMD conducted to investigate filters<sup>4</sup> similar to those proposed for this project, costs were expected to range from \$120 to \$240 per year to replace the filters. In addition, because the filters would not have any effectiveness unless the HVAC system is running, there may be increased energy costs to the resident. The proposed mitigation assumes that the filters operate 100% of the time while residents are indoors. The presumed effectiveness and feasibility of this mitigation should be evaluated in more detail prior to assuming that it will sufficiently alleviate near roadway exposures.

We appreciate your willingness to consider these comments and would appreciate a response prior to the lead agency making any decision on this project. In addition, should this project move forward, please send us any CEQA documentation consistent with regulatory requirements and prior to project approval if a comment period is not required. Should you have any questions, don't hesitate to contact me at (909) 396-3244.

Sincerely,



Ian MacMillan

Program Supervisor, Inter-Governmental Review  
Planning, Rule Development & Area Sources

Attachment

LAC131105-02  
Control Number

---

<sup>3</sup> For a summary, see: <http://www.aqmd.gov/hb/attachments/2011-2015/2013Jul/2013-Jul5-025.pdf>

<sup>4</sup> <http://www.aqmd.gov/rfp/attachments/2010/AQMDPilotStudyFinalReport.pdf>

**Truck Fleet Mix**

The assumed ~25%-75% mix of diesel to gasoline fueled trucks is not representative of this area. Based on both VMT and truck population data from EMFAC 2011, approximately 98% of trucks in the South Coast air basin are diesel powered. The truck fleet mix should be updated based on the information within EMFAC. In addition, the percentage of trucks that are heavy-heavy duty vs. medium-heavy duty, etc. should be calculated based on guidance found in the CalEEMod User's Guide, Appendix E3.

**Toxic Gases Included in HRA**

It appears that only a few toxic gases were included in the HRA, including Diesel Particulate Matter (DPM), benzene, 1,3-butadiene, acetaldehyde, acrolein, and formaldehyde. However, based on the Air Resources Board speciation<sup>5</sup> of vehicle exhaust (speciation profile 2113), several gases considered toxic in California were not included in this assessment, such as ethylbenzene, toluene, xylenes, etc. The HRA should be revised to include impacts from these gases identified by ARB.

In addition, the HRA apparently evaluated the speciated toxic gases from diesel exhaust. Although SCAQMD staff has observed that some lead agencies will evaluate acute health effects from diesel exhaust using these speciated gases, it is not common. Further, it appears that there may be double counting if these gases are included for diesel as the toxicity criteria for DPM is used as a surrogate to cover all diesel exhaust for chronic and carcinogenic risks.

**Filtration Effectiveness**

The proposed mitigation strategy of filtration is apparently assumed to be equally effective against gases and particulates. While filters that remove volatile organic compounds (VOCs) are available, they tend to be much more expensive and are generally less effective than particulate filters. If the mitigation strategy assumes VOC removal, then more detailed information should be provided regarding its effectiveness. Otherwise, indoor toxic gas concentrations should be assumed to be the same as outdoor toxic gases.

**HRA Wording**

Several places in the HRA mention that risks presented there are likely overestimated by an order of magnitude (e.g., pages 2, 9, and 11). However the reasons cited for this overestimation may not actually be as conservative as described. For example, ISC may or may not overpredict concentrations in the near road environment where complicated microscale air flows are involved. For example, the effects of differing elevation, sound walls, and other buildings are difficult to evaluate in ISC (or AERMOD), and it is not clear that ISC will always overestimate results. Notwithstanding these limitations, dispersion modeling and health risks assessments are useful in that they provide a consistent methodology for evaluating potential impacts.

In addition, the claim that outside air is an order of magnitude higher than indoor air appears to be unsubstantiated. There may be small attenuations, however studies have shown that outdoor

---

<sup>5</sup> More information is available here: <http://www.arb.ca.gov/ei/speciate/speciate.htm>

air can be effective at penetrating homes.<sup>6</sup> We therefore recommend reviewing and revising this language regarding overestimation of impacts as necessary.

Lastly, several times in the HRA the risk threshold of 10 in one million is presented as a public-notification threshold pursuant to SCAQMD's AB2588 program. While this is true, the more relevant thresholds to use for this analysis are SCAQMD's CEQA significance thresholds.<sup>7</sup> Although these thresholds are currently equivalent, it is not clear if they will remain so in the future. The reference should be updated in the HRA.

### **Source Parameters in ISC**

The sources parameters input into ISC do not follow standard guidance.<sup>8</sup> For example, the sources are spaced 650 feet apart, approximately 10 times the width of the roadway itself. Sources should be spaced no more than two times the width of the roadway. Other parameters should also be updated (e.g., sigma y and z).

### **Criteria Pollutants**

The HRA did not evaluate criteria pollutant impacts from the freeway on the project. In particular NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> may be elevated in close proximity to roadways, and ambient air quality standards promulgated by EPA now explicitly require attainment in the near road environment. The analysis should be expanded to include evaluation of these pollutants.

### **Fenceline Receptors**

Although these sites are small, the receptors representing them should be placed at the fenceline closest to the freeway. This may yield small difference for this particular project, however for larger sites this differences may be more substantial. The use of a fenceline receptor is also standard industry practice for evaluating health risks.

### **Non-Carcinogenic Health Impacts**

The potential acute health impacts were not presented in this HRA. Further, OEHHA has promulgated guidance for assessing 8-hour chronic impacts. Both of these non-carcinogenic health risks should be evaluated and presented in the HRA.

---

<sup>6</sup> Zhu Y., et al., 2005. Penetration of freeway ultrafine particles into indoor environments. Journal of Aerosol Science, v. 36 p.303-322.

<sup>7</sup> <http://www.aqmd.gov/ceqa/handbook/signthres.pdf>

<sup>8</sup> For a summary see section 3.10.2.1 in Attachment 1 of CAPCOA's guidance document found here: [http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA\\_HRA\\_LU\\_Guidelines\\_8-6-09.pdf](http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf)