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To: Heidi Tschudin
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City of Davis

From: Gary Rubenstein
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Subject: Addendum to Qualitative Assessment of Near-Roadway Air Quality Impacts on the Plaza 2555 Project, Davis, California

This is in response to your request that we re-evaluate the potential air quality impacts of Interstate 80 on the health of future occupants of the proposed Plaza 2555 residential project. Our original analysis, including a description of the project, its mitigating features, and key assumptions for our analysis, were presented in a letter report dated Sept. 21, 2017.[1]

Our original analysis, which was based on a methodology and calculations developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD), concluded that:

- The potential for exposure of future occupants of the Project to significant health hazards from I-80 is below the screening cancer level risk threshold.
- The near-roadway health risk experienced by the Plaza 2555 Project is not expected to be significant.
- Implementation of the proposed Project design features would further reduce the already less-than-significant impacts.

The current re-evaluation is based on a request from the City of Davis Planning Department that the analysis rely on guidance issued by the Bay Area Air Quality Management District (BAAQMD), and not the SMAQMD.

The most recent BAAQMD guidance for analyses of this type is found in Section 5.2.5 of the BAAQMD's May 2017 *California Environmental Quality Act Air Quality Guidelines*.[2] The Guidelines recommend the use of a 1,000 foot radius surrounding a proposed new receptor (such as the proposed project) to identify existing sources of toxic air contaminants and fine particulate ($PM_{2.5}$) emissions that could potentially impact the

[1] I was one of the principal authors of that earlier analysis; I founded my current firm at approximately the time that I was completing the earlier analysis with a colleague at my former firm.
[2] http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

project. In the case of the Plaza 2555 Project, we believe that I-80 is the only existing significant source of emissions that could potentially impact the occupants of the project.

For on-road mobile sources of emissions, such as freeways, the Guidelines recommend the use of the BAAQMD's Roadway Screening Analysis Calculator[3] to estimate potential worst-case health risks from mobile sources at new receptor locations.[4]

In performing this analysis, we used the following input assumptions to the Calculator:

- County: Solano[5]
- Roadway Direction: East-West
- Side of the Roadway: South
- Distance from Roadway: 52 feet
- Annual Average Daily Traffic (ADT): 133,600[6]

The results of the screening analysis are shown in Figure 1 below.

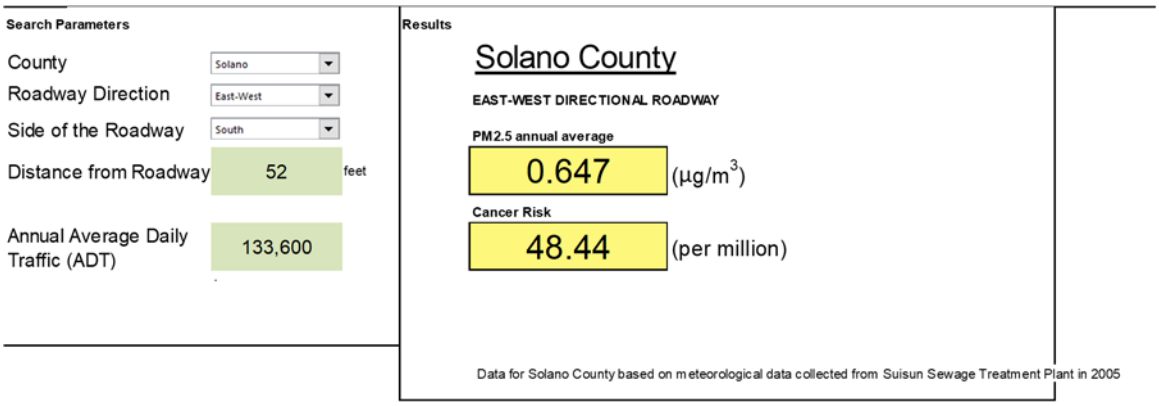

Figure 1. BAAQMD Roadway Screening Calculator Results

[3] http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools

[4] The BAAQMD does not recommend the use of the Roadway Screening Analysis Calculator for "California State Highways", and instead recommends their "Highway Screening Analysis Tool". However, the Highway Screening Analysis Tool differs from the Roadway Screening Analysis Calculator in that it displays results for specific highway segments located within the BAAQMD boundaries; since the project site is not within the BAAQMD, no results can be displayed for the project site. Furthermore, there are no segments of I-80 within the BAAQMD boundary that have the same predominant east-west orientation and comparable traffic flows as the project site. Consequently, within the tools available to apply the BAAQMD methodology, we believe that the Roadway Screening Analysis Calculator is most appropriate for the project site.

[5] Since the Roadway Screening Analysis Calculator was developed by the BAAQMD for use on projects located within the BAAQMD, it does not provide an option to select Yolo County. Give the proximity of the project site to the Solano County border, and the prevailing east-west direction of I-80 in both Yolo and Solano Counties, the Solano County option was viewed as most representative of the project site.

[6] From Caltrans 2016 Traffic Volumes (http://www.dot.ca.gov/trafficops/census/), Ahead AADT volumes for Davis, Olive Avenue.

These values are health-conservative (overstated) for the following reasons:

- Distances from the roadway to the development input to the Screening Analysis Calculator are supposed to be distances from the center of the roadway to the development. In our analysis, to be conservative, we used a distance of 52 feet from the edge of the nearest travel lane to the fence line of the development.

- The Screening Analysis Calculator uses emissions from vehicles on California roadways in calendar year 2014; emission rates will be lower at the time the project becomes occupied.

- The Screening Analysis Calculator does not reflect the benefits of the 10-foot wide vegetative barrier between I-80 and the project that is a mitigating project feature.

The values shown in Figure 1 are below the applicable BAAQMD significance thresholds for cumulative impacts of 0.8 µg/m3 for annual average $PM_{2.5}$ concentrations and an excess cancer risk of 100 in one million.[7] Thus, the conclusions presented in our original analysis are confirmed in this reassessment using the BAAQMD methodology and criteria.

[7] The BAAQMD Roadway Screening Calculator does not present calculations for acute or chronic health risk. However, for a continuously emitting source such as a freeway, the annual average cancer risk calculations are likely to be controlling, and a roadway that is below the excess cancer risk threshold would be below the acute and chronic risk thresholds as well.