

Master Response 2: Air Quality Health Risk Assessment

This master response addresses the issues comments raised with respect to the Air Quality Health Risk Assessment (HRA) Analyses. The Draft EIR addresses this topic in Chapter IV.C, Air Quality and Chapter IV.G, Hazards and Hazardous Materials. See especially Impact C-4 (the potential for the proposed project to expose sensitive receptors to substantial pollutant concentrations) and Impact G-3 (the potential for the proposed project to emit hazardous emissions within one-quarter mile of a school). The Draft EIR also references analyses and findings of the following appendices:

- Appendix E: Health Risk Assessment Regarding Vehicle Emissions Associated with the Proposed the Marina Center
- Appendix F: Health Risk Assessment Associated with Diesel Emissions Associated with Wetlands Construction and Delivery Operations for the Proposed Marina Center Project

This master response addresses all or part of the following comments: 12-10, 16-17, 16-20, 16-268, 32-2, 32-3, 33-5, 33-14, 74-2, 74-5, 84-2, 95-5, 95-8, 126-11, and 148-3.

The comments suggest that the HRAs prepared for the proposed project are inadequate. The comments specifically state that:

- The HRAs fails to account for higher than normal cancer rates and/or risks in Humboldt County.
- The HRAs uses out-of-date data, data upwind from the project site according to prevailing wind patterns, and/or cited data that was not yet available at the time of the preparation of the HRAs.
- The HRAs insufficiently analyzes diesel emissions and should be redone.
- The HRA data sets omit analysis of air quality impacts associated with excavation and removal of contaminated soil and the levels of toxic pollutants in the proposed project's parking area.
- The HRAs fails to take into account current pollutant source contributors, such as the Evergreen Pulp and Fairhaven Co-Generation Plant, wood combustion for heating, delivery sites, and the U.S. 101 corridor-related automobile pollutants.
- An HRA should be prepared for operational automobile traffic.

Response

An HRA was conducted to evaluate the cancer risks and non-cancer health effects associated with exposure to toxic air contaminants (TACs) emitted during wetlands construction and operation of the proposed project. Cancer risks are evaluated based on assumed lifetime exposure to TACs over the expected lifespan of the projects. Non-cancer health risks evaluated include adverse health effects from both acute (highest 1-hour exposure) and chronic (1-year exposure). The assessment methods are designed to estimate the highest possible, or "upper bound" risks to the

most sensitive members of the population (i.e., children, elderly, infirm), as well as those that are potentially exposed to TACs on a routine and prolonged basis (i.e., residents, recreational area users, and workers). The HRA was conducted in accordance with technical guidelines developed by federal and state agencies, including USEPA, California Office of Environmental Health Hazard Assessment (OEHHA),⁴ and the BAAQMD.⁵ The HRA is based on estimated emissions of a wide variety of TACs from the project site, and the length of time those living, working, and recreating in the vicinity of the project site could be exposed to TAC emissions. Actual exposures are not measured, but rather are modeled using sophisticated software that uses local meteorology and topography to predict the dispersion of TACs from their source, and the resulting concentrations at receptor sites. The models tend to be conservative, both in terms of the estimated exposure, and the toxic effects of the substances to which people are exposed: the models tend to overestimate the adverse health effect.

According to CalEPA guidelines, the results of an HRA should not be interpreted as the expected rates of cancer or other potential human health effects, but rather as estimates of potential risk or likelihood of adverse effects based on current knowledge, under a number of highly conservative assumptions and the best assessment tools currently available.⁶

As a note of clarification, Draft EIR Appendix F, *Health Risk Assessment Associated with Diesel Emissions Associated with Wetlands Construction and Delivery Operations for the Proposed the Marina Center Project*, is based on an outdated concept of the proposed project. This earlier report was superseded by the report in Draft EIR Appendix E, *Health Risk Assessment Regarding Vehicle Emissions Associated with the Proposed Marina Center Project*, which includes an updated site layout, traffic counts, and other updates. The report in Appendix E represents the most up to date Health Risk Assessment and the Report in Appendix F should be disregarded; it was inadvertently included as an appendix in the Draft EIR. (Please also see Chapter 2, Errata).

One comment suggests that the Draft EIR ignores the technical evidence that indicates that diesel exhaust can be harmful to health. However, in acknowledgment of the potential harmful effects of diesel particulate matter, the HRA was prepared for the project that estimated the health risk that would be caused by diesel and other emissions that would be associated with project. For a discussion of the results of the HRA, which discloses a less-than-significant project-related health hazard impact, please see Draft EIR pages IV.C-16 through IV.C-19.

The assessment of health related impacts due to diesel exhaust, as summarized in Appendix E, are based on data calculated from the existing and projected traffic flows using accepted methods established in the California Air Resources Board (CARB) risk assessment tools. The CARB risk assessment tools follow the Health Risk Assessment guidelines and steps outlined by the National Academy of Sciences. The emission components and rates used in the analysis are for pollutants associated with emissions that are designated as hazardous in CARB's Emission Inventory

⁴ Air Toxics Hot Spots Program Risk Assessment Guidelines, Parts I-IV and Appendices, California Environmental Protection Agency, OEHHA, 1997 - 2003.

⁵ BAAQMD Health Risk Screening Analysis Guidelines (http://www.baaqmd.gov/pmt/air_toxics/risk_procedures_policies/hrsa_guidelines.pdf), June 2005.

⁶ California Environmental Protection Agency, OEHHA, Op Cit

Criteria and Guidelines Regulations (Title 17, California Code of Regulations, Sections 93300-93300.5), and CARB's Emission Inventory Criteria and Guidelines Report. The HRA evaluates the incremental health risk associated with projected mobile sources, including diesel delivery trucks. This analysis is included in the Draft EIR to specifically assess the impacts of diesel and automotive emissions at the site.

Several comments appear to criticize the Draft EIR for not describing Humboldt County as an area with a high ranking for cancer incidence. However, as described on Draft EIR page IV.C-17, The American Lung Association has graded Humboldt County as A, the best grade possible. In addition, one commenter appears to have incorrectly interpreted the intent of Table IV.C-7 by indicating that it suggests that there are no health effects in Humboldt County due to the small population in the County. However, the purpose of the table is to illustrate that the population of Humboldt County appears to be at no greater risk than the total population of California for the groups identified.

Several other comment concern that the Draft EIR does not include evaluation of the health effects of project-related traffic that would be diverted into Eureka neighborhoods. In order to evaluate the project's potential impacts on traffic in the surrounding geographic area, the Draft EIR evaluates and models the potential diversion of vehicle trips from major arterials onto surrounding neighborhood roadways, including Herrick Avenue, Harris Avenue, and S Street, that might be caused by the project. The transportation analysis specifically modeled the geographic distribution and magnitude of trips at all intersections and on all segments within the Eureka area using the Greater Eureka Area Traffic Model, which is an accepted method for identifying potential project impacts on surrounding traffic patterns. For all locations mentioned by the comments, the increase in traffic was found to be insignificant. For example, the project is expected to increase traffic on Herrick Avenue by only 13 trips in the a.m. peak hour and 17 trips in the p.m. peak hour. On F Street, south of Downtown, the project would contribute 5 trips in the a.m. peak hour and 9 trips in the p.m. peak hour. Similar results were found for Harris Avenue and S Street. Given the negligible number of vehicle trips and the low level of emissions anticipated from those trips, the project would not be anticipated to have a measurable effect, and certainly no significant effect, on human health or sensitive receptors along the referenced roadways.

Health risk assessments measure incremental health risks based on a number of factors, including the type and concentration of emissions and the proximity of those emissions to sensitive receptors. For the proposed project, the two major sources of emissions from a health risk perspective involve the starting and stopping of motor vehicles (personal and commercial) and the operation of diesel trucks at the project site. Emissions from personal motor vehicles, including vehicle trips around surrounding roadways, pose substantially less risk. The Draft EIR nonetheless evaluates those risks and concludes that the project would have a less-than-significant impact on human health (see Draft EIR pages IV.C-16 and IV.C-17 and Appendix E). As for sensitive receptors—such as the Pinehill School, Eureka Golf Course, or Zane Middle School in the neighborhoods surrounding Herrick Avenue, Harris Avenue, and S Street—the few vehicle trips and associated emissions that would occur during the peak-hours would not be expected to result in a significant increase in health risk to sensitive receptors.

At least two comments indicate that the HRA fails to analyze prevailing wind patterns for localized effects in relation to specific demographics or land uses such as schools, hospitals, and senior centers. However, a meteorological data set that includes the prevailing wind patterns was incorporated into the air dispersion modeling and risk analysis performed for the site. The weather data used in the analysis was provided in a database compiled by CARB. The database provides weather data for wind direction, temperature, and air inversion modeling. The appropriate values from the database are selected based on the site location coordinates. If the closest weather station represented in the database does not have a particular parameter, such as wind direction, data from the next nearest station with appropriate data is selected.

One comment asks what mitigation measures would be implemented to reduce emissions of particulate matter. The estimated project and cumulative construction-related emissions, as summarized in Table 3 on page 13 of Draft EIR Appendix E are below the North Coast Unified Air Quality Management District (NCUAQMD) thresholds for significance, and therefore no further mitigation measures are warranted. See also Draft EIR page IV.I-12 Impact C-2.