

Petition for Application Supplement

Application 21-36p

Intervener Derrick J. Butler, 596 Governors Highway, South Windsor, CT

Intervener Section 4D) Application and use on property will have adverse affects to public health and safety

Air quality and danger with neighborhoods in close proximity to high truck volume trucking terminals and DCs.

I am adding as exhibit -#2 the Air quality and land us handbook and report from the California Environmental Protection Agency. In this report they show activities producing heavy truck traffic that produces diesel PM emissions. Diesel PM is identified as a toxic air contaminant and represents 70% of the potential cancer risk from air toxics. Their report is based on 100 tractor trailer trips per day which is less than half of the activity planned at this site on a daily basis. They estimate the cancer risk is over 100 per million with neighbors within 800 feet of the facility. The risk drops to 10 to 100 million at a distance of 800ft to 3600ft, and drops again to less than 10 per million with homes over 3600 ft from the terminal. Based on the CAPA's report and their figure 1-3 (decrease in relative concentration of risk with distance). Their (AQMD) analysis indicate a separation of 1000 ft would substantially reduce diesel PM concentration and public exposure. Since most of the neighborhood is within 500-600 ft of the proposed terminal and the 1000 ft separation is not possible, the project is unsafe for the public and the neighborhood.

EPA regulations regarding reducing idling should not be used as a solution. The Federal Motor Carriers Safety Administration - (FMCSA) regulates and has enforcement power over the domestic trucking industry. They mandate that a driver must complete a pre trip inspection on each truck they will operate on their shift. The pre trip inspection & (DVIR), in regulation 49cfr 396.11 must be completed every day and takes at least 20 minutes to complete. The trucks are running during the DVIR process. The DVIR process supersedes any of the EPA idling restrictions. Also please make a note the large diesel engines run twice as long during the cold winter months to prevent the fuels from jelling.

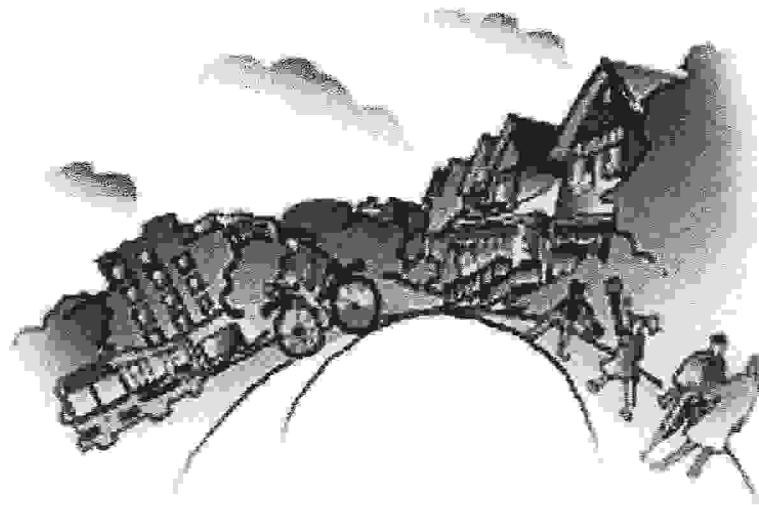
The additional running time for cold temperatures is specific to New England and was not planned for the AQMD analysis. Winter idling, TRU motor running time of refrigerator units, propane fork lift use, can easily double the diesel PM's within 500 feet of the neighborhood.

Intervener section 4F) Public Safety

Intersection of Governors Highway and Talbot Lane is not large enough for the high level of truck traffic proposed. Trucks do not have enough turn radius at that intersection for trucks to enter and exit at the same time and this will cause dangerous back up hazards to oncoming traffic and pedestrian traffic. Peak demand for the site will occur at peak traffic time for the local roadway, pedestrians, and bicyclists. .



AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE



April 2005

California Environmental Protection Agency
California Air Resources Board



- Zhu, Y et al. "Study of Ultra-Fine Particles Near A Major Highway With Heavy-Duty Diesel Traffic." Atmospheric Environment. 2002 ; 36:4323-4335
- Knape, M. "Traffic related air pollution in city districts near motorways." The Science of the Total Environment. 1999; 235:339-341
- *Roseville Rail Yard Study*. ARB (October 2004)
- *ARB Diesel Risk Reduction Plan*. (2000)
- Delfino RJ "Epidemiologic Evidence for Asthma and Exposure to Air Toxics: Linkages Between Occupational, Indoor, and Community Air Pollution Research." Environmental Health Perspectives. (2002) 110 (supplement 4): 573-589
- English P., Neutra R., Scaif R. Sullivan M. Waller L. Zhu L. "Examining Associations Between Childhood Asthma and Traffic Flow Using a Geographic Information System." (1999) Environmental Health Perspectives 107(9): 761-767

Distribution Centers

Distribution centers or warehouses are facilities that serve as a distribution point for the transfer of goods. Such facilities include cold storage warehouses, goods transfer facilities, and inter-modal facilities such as ports. These operations involve trucks, trailers, shipping containers, and other equipment with diesel engines. A distribution center can be comprised of multiple centers or warehouses within an area. The size can range from several to hundreds of acres, involving a number of different transfer operations and long waiting periods. A distribution center can accommodate hundreds of diesel trucks a day that deliver, load, and/or unload goods up to seven days a week. To the extent that these trucks are transporting perishable goods, they are equipped with diesel-powered transport refrigeration units (TRUs) or TRU generator sets.

The activities associated with delivering, storing, and loading freight produces diesel PM emissions. Although TRUs have relatively small diesel-powered engines, in the normal course of business, their emissions can pose a significant health risk to those nearby. In addition to onsite emissions, truck travel in and out of distribution centers contributes to the local pollution impact.

ARB is working to reduce diesel PM emissions through regulations, financial incentives, and enforcement programs. In 2004, ARB adopted two airborne toxic control measures that will reduce diesel PM emissions associated with distribution centers. The first will limit nonessential (or unnecessary) idling of diesel-fueled commercial vehicles, including those entering from other states or countries. This statewide measure, effective in 2005, prohibits idling of a vehicle more than five minutes at any one location.³ The elimination of unnecessary idling will reduce the localized impacts caused by diesel PM and other air toxics

³ For further information on the Anti-Idling ATCM, please click on:
<http://www.arb.ca.gov/toxics/idling/outreach/factsheet.pdf>

in diesel vehicle exhaust. This should be a very effective new strategy for reducing diesel PM emissions at distribution centers as well as other locations.

The second measure requires that TRUs operating in California become cleaner over time. The measure establishes in-use performance standards for existing TRU engines that operate in California, including out-of-state TRUs. The requirements are phased-in beginning in 2008, and extend to 2019.⁴

ARB also operates a smoke inspection program for heavy-duty diesel trucks that focuses on reducing truck emissions in California communities. Areas with large numbers of distribution centers are a high priority.

Key Health Findings

Diesel PM has been identified by ARB as a toxic air contaminant and represents 70 percent of the known potential cancer risk from air toxics in California. Diesel PM is an important contributor to particulate matter air pollution. Particulate matter exposure is associated with premature mortality and health effects such as asthma exacerbation and hospitalization, due to aggravating heart and lung disease.

Distance Related Findings

Although distribution centers are located throughout the state, they are usually clustered near transportation corridors, and are often located in or near population centers. Diesel PM emissions from associated delivery truck traffic and TRUs at these facilities may result in elevated diesel PM concentrations in neighborhoods surrounding those sites. Because ARB regulations will restrict truck idling at distribution centers, the largest continuing onsite diesel PM emission source is the operation of TRUs. Truck travel in and out of distribution centers also contributes to localized exposures, but specific travel patterns and truck volumes would be needed to identify the exact locations of the highest concentrations.

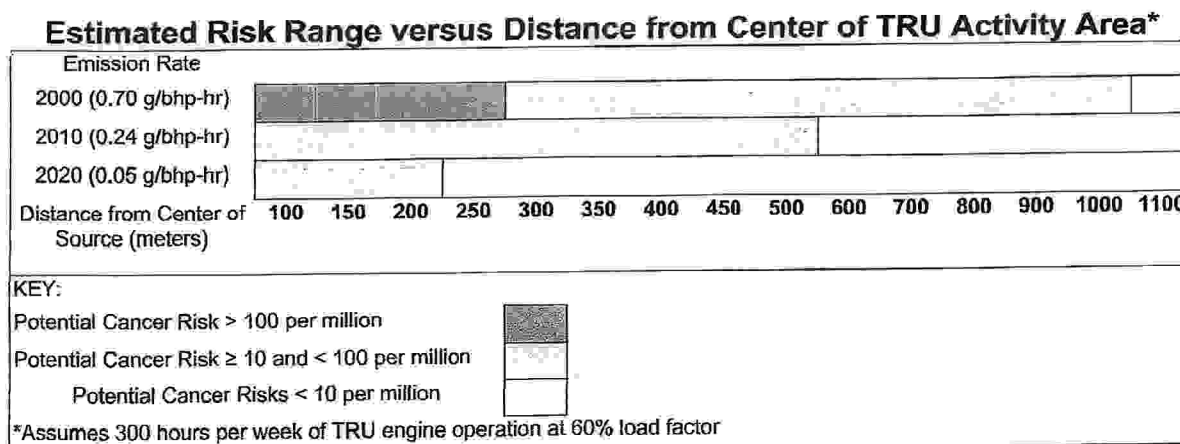
As part of the development of ARB's regulation for TRUs, ARB staff performed air quality modeling to estimate exposure and the associated potential cancer risk of onsite TRUs for a typical distribution center. For an individual person, cancer risk estimates for air pollution are commonly expressed as a probability of developing cancer from a lifetime (i.e., 70 years) of exposure. These risks were calculated independent of regional risk. For example, the estimated regional cancer risk from air toxics in the Los Angeles region (South Coast Air Basin) is approximately 1,000 additional cancer cases per one million population.

⁴ For further information on the Transport Refrigeration Unit ATCM, please click on: <http://www.arb.ca.gov/diesel/documents/trufaq.pdf>

The diesel PM emissions from a facility are dependent on the size (horsepower), age, and number of engines, emission rates, the number of hours the truck engines and/or TRUs operate, distance, and meteorological conditions at the site. This assessment assumes a total on-site operating time for all TRUs of 300 hours per week. This would be the equivalent of 40 TRU-equipped trucks a day, each loading or unloading on-site for one hour, 12 hours a day and seven days a week.

As shown in Figure 1-2 below, at this estimated level of activity and assuming a current fleet diesel PM emission rate, the potential cancer risk would be over 100 in a million at 800 feet from the center of the TRU activity. The estimated potential cancer risk would be in the 10 to 100 per million range between 800 to 3,300 feet and fall off to less than 10 per million at approximately 3,600 feet. However with the implementation of ARB's regulation on TRUs, the risk will be significantly reduced.⁵ We have not conducted a risk assessment for distribution centers based on truck traffic alone, but on an emissions basis, we would expect similar risks for a facility with truck volumes in the range of 100 per day.

Figure 1-2

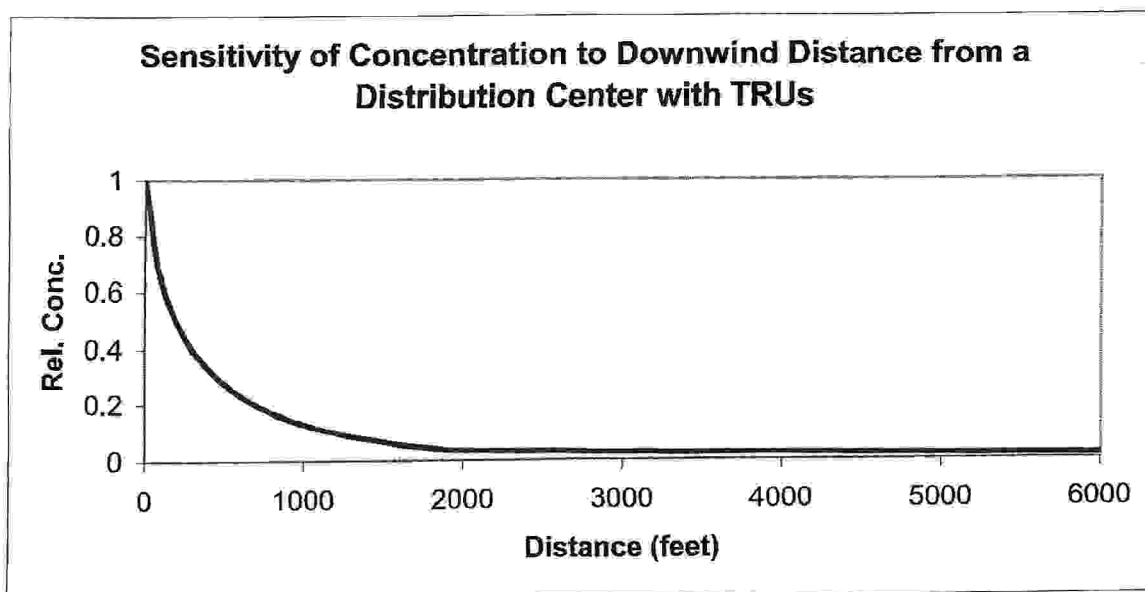


The estimated potential cancer risk level in Figure 1-2 is based on a number of assumptions that may not reflect actual conditions for a specific site. For example, increasing or decreasing the hours of diesel engine operations would change the potential risk levels. Meteorological and other facility specific parameters can also impact the results. Therefore, the results presented here are not directly applicable to any particular facility or operation. Rather, this information is intended to provide an indication as to the potential relative levels of risk that may be observed from operations at distribution centers. As shown in Figure 1-2, the estimated risk levels will decrease over time as lower-emitting diesel engines are used.

⁵ These risk values assume an exposure duration of 70 years for a nearby resident and uses the methodology specified in the 2003 OEHHA health risk assessment guidelines.

Another air modeling analysis, performed by the South Coast Air Quality Management District (South Coast AQMD), evaluated the impact of diesel PM emissions from distribution center operations in the community of Mira Loma in southern California. Based on dispersion of diesel PM emissions from a large distribution center, Figure 1-3 shows the relative pollution concentrations at varying distances downwind. As Figure 1-3 shows, there is about an 80 percent drop off in concentration at approximately 1,000 feet.

Figure 1-3
Decrease In Relative Concentration of Risk
With Distance



Both the ARB and the South Coast AQMD analyses indicate that providing a separation of 1,000 feet would substantially reduce diesel PM concentrations and public exposure downwind of a distribution center. While these analyses do not provide specific risk estimates for distribution centers, they provide an indication of the range of risk and the benefits of providing a separation. ARB recommends a separation of 1,000 feet based on the combination of risk analysis done for TRUs and the decrease in exposure predicted with the South Coast AQMD modeling. However, ARB staff plans to provide further information on distribution centers as we collect more data and implement the TRU control measure.

Taking into account the configuration of distribution centers can also reduce population exposure and risk. For example, locating new sensitive land uses away from the main entry and exit points helps to reduce cancer risk and other health impacts.