

To: Josh Marx, USACE	
From: Ed Liebsch, HDR	Project: BNSF – Kansas City Intermodal Facility (KCIMF)
cc: Jeff Turner, HDR; Skip Kalb, Russell Light, BNSF	
Date: Oct. 12, 2009	Job No: 59871, Dept. 133

Re: 2030 Air Quality Effects of 7.1 Million Square Feet of Logistics Park Warehouse Space

This memorandum was requested by the Corps to provide a qualitative assessment of air quality effects of a hypothetical maximum possible amount of Logistics Park warehouse space in the year 2030 near Gardner, Kansas. It concludes that if the Logistics Park were built to 7.1 million square feet of industrial and warehousing space by 2030, a level of development that is not reasonably foreseeable, the combined air quality impacts of the Kansas City Intermodal Facility and the Logistics Park would not be significant.

The *Air Quality Technical Report*, prepared as part of the supporting documentation for the Kansas City Intermodal Facility (KCIMF) *Draft Environmental Assessment*, presented emissions and dispersion analyses for a year 2010 emissions scenario, and showed that KCIMF emissions would be greater in 2010 than in 2030, due primarily to more stringent USEPA emissions standards for both on-road and non-road engines. The emissions trend analysis projected KCIMF emissions from 2010 to 2030, accounting for potential growth in freight movement over the period, together with expected decreases in emission rates per engine.

The Logistics Park emissions, which were included in the dispersion modeling and both the local and regional emissions analysis, represented approximately 5% of the total projected 2010 emissions from the KCIMF and Logistics Park combined. To provide a very conservative (over estimate) analysis of air quality impacts for 2010 conditions, the Logistics Park emissions were based on the maximum level of reasonably foreseeable development on the Logistics Park site, 2.86 million square feet of industrial and warehousing space.

In general, given that Logistics Park emissions from 2.86 million square feet represents only about 5% of site-wide emissions in 2010, it appears that hypothetical Logistics Park growth to 7.1 million square feet would have a minor effect on total site emissions. Furthermore, since all Logistics Park emissions are due to on-road motor vehicles, primarily heavy-duty diesel vehicles (HDDVs), the dramatic decrease in on-road truck emissions between 2010 and 2030 that will result from existing USEPA emissions rules applicable to both fuels and engines will also significantly reduce emissions from the Logistics Park.

Regarding diesel fuel, in 2007 the USEPA required on-road diesel fuel to reduce sulfur from a maximum of 500 parts per million (ppm) to no more than 15 ppm. This change will not only reduce sulfur dioxide emissions, it will enable the addition of advanced emission-reducing technology to on-road truck engines. This new, EPA-mandated technology will reduce emissions of the pollutants of greatest concern from diesel engines, primarily fine particulate matter (PM_{2.5}) and nitrogen oxides (NO_x), which adversely impact ozone on a regional scale. The reduced sulfur fuels needed to be implemented first, so sulfur would not foul the high efficiency particulate air filters for PM control and the selective catalytic reduction (SCR) system catalyst for NO_x control.

The HDDV emissions trends data previously provided to USACE and USEPA in support of the air quality analysis for the KCIMF *Draft Environmental Assessment*, showed that in 2030, HDDV emissions on the KCIMF site would be only 18.8% of their 2010 values for NO_x and 33.3% of their 2010 values for PM_{2.5}. These substantial decreases were despite a projected increase in freight movement of greater than a factor of two over the period. Therefore, assuming HDDV traffic increases according to the ratio of hypothetical maximum warehouse space in 2030 (7.1 million square feet) to analyzed warehouse space in 2010 (2.86 million square feet), or a factor of almost 2.5, the HDDV emissions from the Logistics Park activities in 2030 would still be far lower than the HDDV emissions analyzed for the 2010 emissions scenario. The modeled impacts of the 2010 emissions scenario were minor. The air quality impacts of a 2030 emissions scenario, even with a hypothetical maximum build-out of Logistics Park warehouse space, would remain smaller than the impacts analyzed for 2010.