

***Particulate Matter Less Than Ten Microns Significant Impact Determination***

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Particulate Matter Less Than Ten Microns (PM<sub>10</sub>) is defined as inhalable coarse particles less than ten microns in diameter. PM<sub>10</sub> that is generated at industrial sites or along roadways can be comprised of various materials including soil, dust, metals, acids (nitrates and sulfates) or organic chemicals.

If a construction project triggers the need for an ambient air quality impact analysis, the applicant must perform an initial assessment, or preliminary impact analysis, to determine if a full impact analysis is necessary. The preliminary impact analysis should only consider the potential emissions due to the proposed construction or the net emissions increase due to a modification. The results obtained from the preliminary impact analysis will be used to determine if the applicant can avoid a detailed, cumulative air quality analysis that requires an assessment of compliance with the National Ambient Air Quality Standards (NAAQS) and the Prevention of Significant Deterioration (PSD) increment standards. Initially, the preliminary impact analysis will be used to answer the following questions:

1. Does the ambient concentration due to the proposed project exceed the significant impact levels?
2. Does the ambient concentration due to the proposed project exceed the significant monitoring thresholds (applies to PSD permit applications only)?
3. If a significant impact is predicted to occur, what is the furthest extent of the significant impact area?

PM<sub>10</sub> is said to have a significant impact if the maximum predicted concentration for the 24-hour or the annual averaging period exceeds the thresholds contained within Table 1.

<b>Table 1</b>			
<b>PM<sub>10</sub> Significant Impact Thresholds</b>			
<b>Pollutant</b>	<b>Averaging Time</b>	<b>Significant Impact Level</b>	<b>Comment</b>
		<i>(µg/m<sup>3</sup>)</i>	
PM <sub>10</sub>	24-Hour	5.0	Maximum 24-Hour Impact
PM <sub>10</sub>	Annual	1.0	Maximum Annual Impact

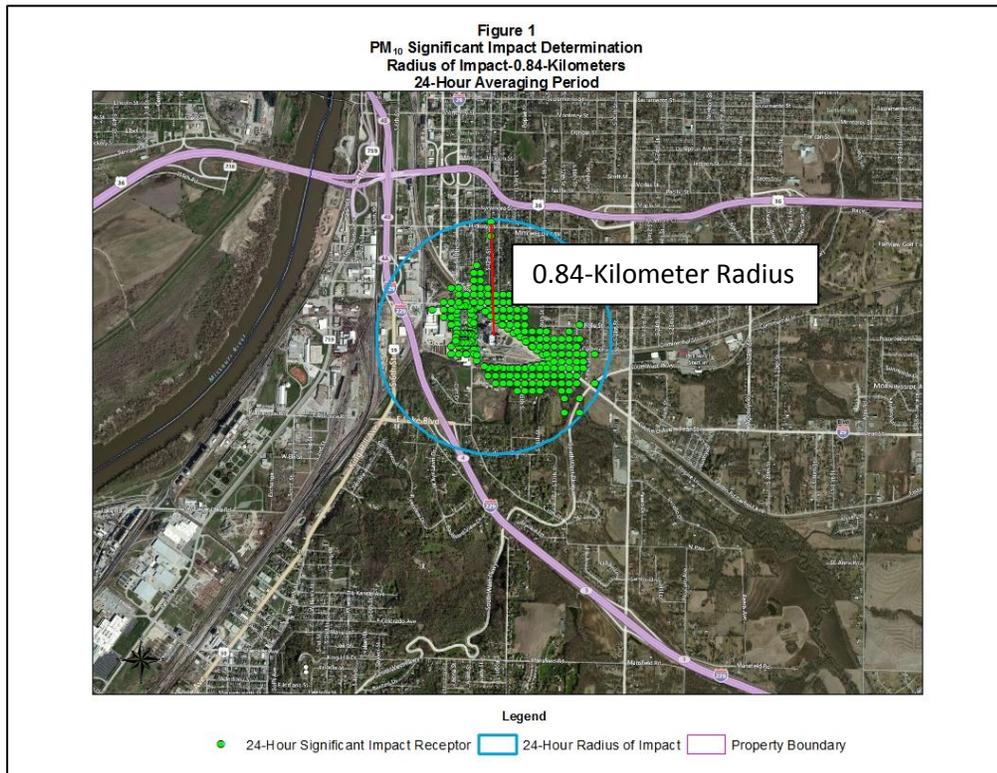
If the predicted concentration exceeds the significant impact level for any averaging period, a full impact analysis is required. For example, if the predicted maximum PM<sub>10</sub> impact for the 24-hour averaging period is 6.28 µg/m<sup>3</sup> and the maximum annual concentration is 0.98 µg/m<sup>3</sup>, a full impact analysis is required for both averaging periods, even though the maximum annual concentration is less than 1.0 µg/m<sup>3</sup>.

If it is determined that a significant impact will take place, the applicant must determine the radius of impact due to the construction of the proposed project or modification. This information will be used to determine the extent of the model domain for the cumulative impact assessment and will aid in interactive source inventory development.

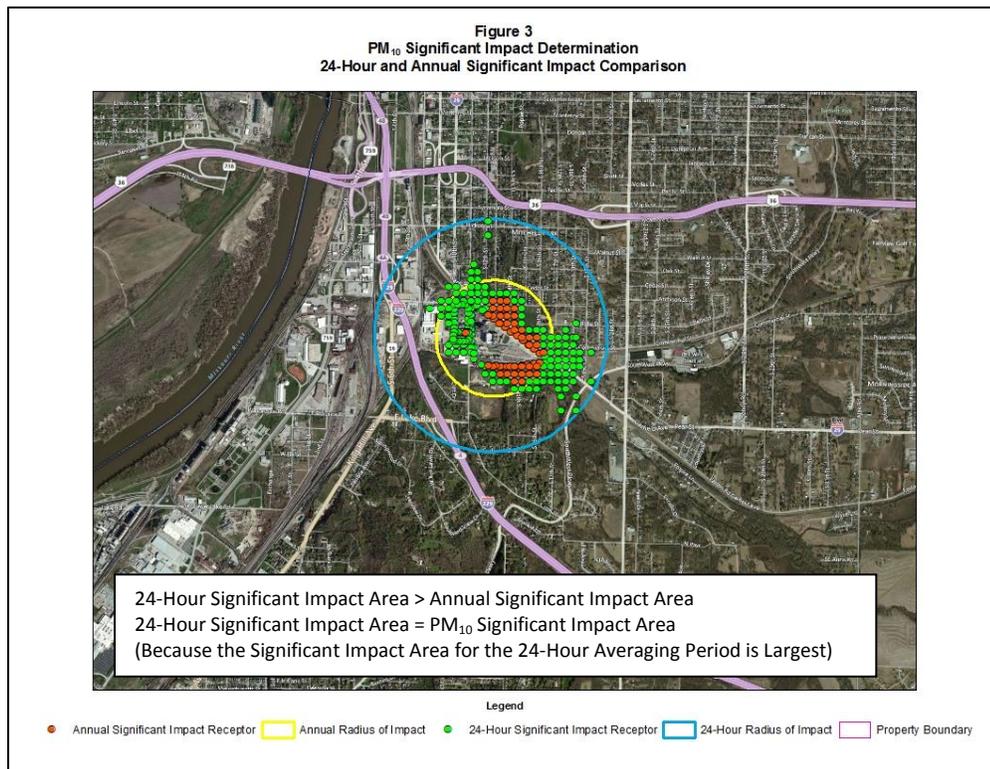
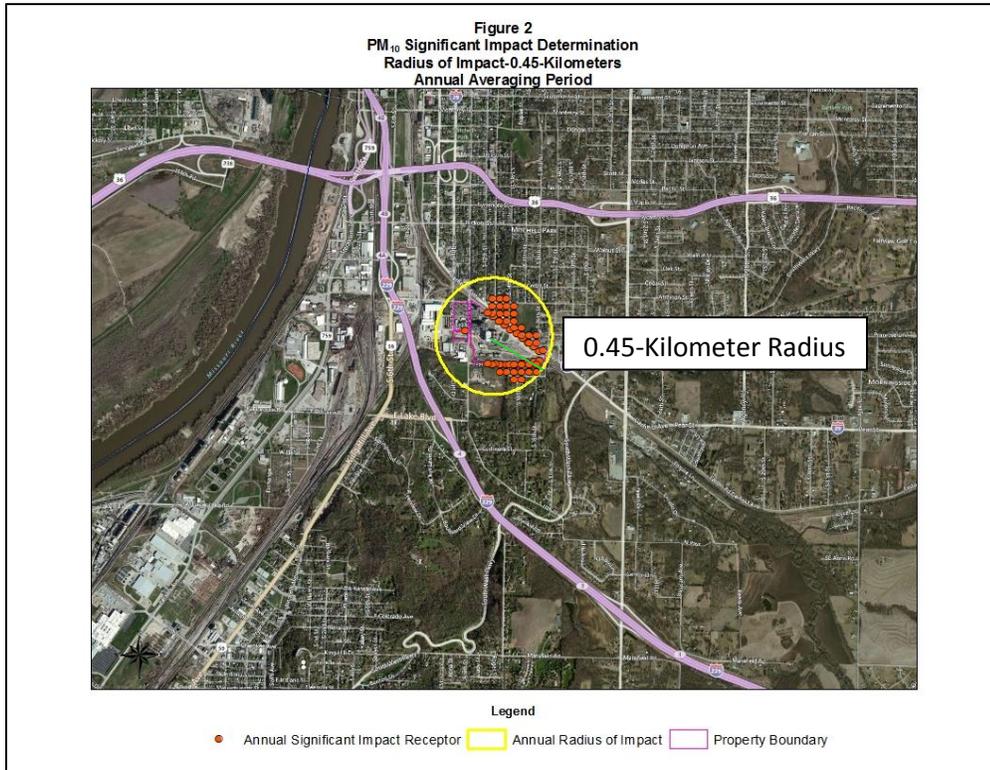
The radius of impact, commonly referred to as the significant impact area, is the circular area whose radius extends from the center of the facility to the most distant receptor where a significant impact is

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predicted to occur, or 50-kilometers, whichever is less. In order to determine the furthest extent of the impact area, each averaging period must be reviewed. For example, the model output for a new construction project indicates that the significant impact for the 24-hour averaging period occurs out to a distance of 0.84-kilometers from the source and out to a distance of 0.45-kilometers from the same source for the annual averaging period. The  $PM_{10}$  radius of impact for the project becomes 0.84-kilometers because this is the largest area of impact that is predicted to occur; refer to Figure's 1, 2 and 3.



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It is important to note that the determination of ambient impact due to new source or modification must consider quantifiable point source releases and fugitive source releases.

**IMPORTANT!!!** If a significant impact is predicted to occur and a ***Section 8***, major source permit is being sought, the applicant must determine if pre-construction monitoring will be required. Part D, of the 1977 Clean Air Act Amendments, requires PSD applicants to collect site-specific monitoring data for PM<sub>10</sub> if the significant monitoring threshold of 10 µg/m<sup>3</sup> is exceeded for the 24-hour averaging period. The primary objective of the data collection effort is to ensure that the existing air quality within the region is in compliance with the NAAQS.

The applicant must collect a minimum of one-year of data if it is determined that preconstruction monitoring is required. Additional information regarding preconstruction data collection efforts can be found at the following link: [Preconstruction Monitoring Requirements](#).