Update: Mobile Source Air Toxics (MSATs)

Mobile Source Air Toxics (MSATs) have become a "hot" topic in the past few years. A number of states throughout the country have recently experienced, or are currently experiencing, legal action related to the perceived risk from MSAT emissions from highway projects. The following provides a brief introduction of what MSATs are and how we need to evaluate MSATs in our environmental documents.

What are MSATs?

MSATs are 7 hazardous air pollutants with significant contributions from mobile sources: acrolein; benzene; 1,3-butadiene; diesel particulate matter, formaldehyde, naphthalene, polycyclic organic matter. The health risk from MSAT exposure is related to cancer and long term ailments, not emergent disease, like asthma attacks. Unlike pollutants like ozone and carbon monoxide that have emissions limits and are subject to transportation conformity, there are no emission standards for MSATs. While modeling tools can estimate MSAT emissions from a project, information regarding mobile source air toxics is "still evolving" and there are limited tools for determining project-specific health outcomes (cancer risk) from MSAT exposure.

When do MSATs need to be evaluated on projects?

While still "interim," the 2009 FHWA guidance on MSATs is considered the best practice for determining the appropriate level of MSAT analysis for transportation projects. FHWA guidance is available online: (http://www.fhwa.dot.gov/environment/airtoxic/100109guidmem.htm) The tiered approach to analysis outlined by FHWA is summarized below:

1. No analysis for projects with no potential for meaningful MSAT effects;
    - CE, DCE, exempt from AQ analysis, no meaningful changes to traffic
2. Qualitative analysis for projects with low potential MSAT effects or for projects that improve operations without meaningful MSAT increases (most projects)
3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects. Those projects include:
    - Create/significantly alter a major intermodal freight facility with potential to concentrate high levels of diesel particulate matter in a single location;
    - Create/add significant capacity to roads with approx. >140,000 AADT

Is mitigation needed for MSATs?

No. There is no standard MSAT mitigation available, nor is mitigation required for MSATs (of course, that might change in the future). Even with projected VMT increases, cleaner fuels and new vehicle controls are expected to decrease MSAT emissions. Also, some project elements can reduce MSAT exposure, such as noise walls and anti-idling restrictions. WSDOT can take credit for these project elements in our environmental document.

How will MSAT analysis affect my project schedule and budget?

Most projects are either exempt from MSAT analysis or evaluated qualitatively as part of the air quality discipline report. In both cases, template language is tailored to the project and there is no effect to project schedule or budget (approx. 5-10 hours). A quantitative analysis takes longer and the effort depends on the complexity of the project corridor. The most challenging part of performing an MSAT analysis can be getting the right traffic information, since the traffic analysis area will often extend beyond WSDOT facilities. WSDOT projects analyzed internally have averaged around 120 hours for a quantitative analysis.

The WSDOT Air, Noise, Energy Program is capable of performing the analysis and/or reviewing consultant reports for the regions. For more information, please contact Tim Sexton, WSDOT Air, Noise, Energy Program, at (206)440-4549 for more information or questions.