

Environmental Review Unit Environmental Assessment Worksheet air assessment practices

Applicability

The practices described in this document apply to projects ([Minn. R. 4410.0200, subp. 65](#)) that require the preparation of an Environmental Assessment Worksheet (EAW) ([Minn. R. 4410.1000](#)), where the Minnesota Pollution Control Agency (MPCA) is the Responsible Governmental Unit (RGU). An exception to this are feedlot EAWs, which have their own air assessment process.

This document also does not apply to projects which require the preparation of an Environmental Impact Statement (EIS). Air assessments for projects requiring an EIS are developed on a case-by-case basis through the scoping process.

The air assessment practices described in this document are an addition to, not a replacement of, any other applicable air assessment requirements that may apply as part of the MPCA's air emission permitting process.

Disclaimer

This document is guidance, it does not replace provisions or regulations of the Clean Air Act or any state statute or rule, nor is it a regulation itself. It does not impose binding, enforceable requirements on any party. The provisions in this document may not apply to particular situations based upon unique or unusual circumstances.

Purpose

The MPCA's Environmental Review Unit (ERU) uses the air assessment process to help determine if the project's air emissions have the potential for significant environmental effects.

Air assessment administrative process

The ERU's air assessment process generally follows the approach presented below:

- Project proposer determines that the project will require preparation of an EAW.
- Project proposer determines if the project will result in air emissions described in this document.
 - If no, the project proposer documents their findings and submit them to the MPCA ERU with their initial EAW data submittal.
 - If yes, the project proposer prepares a proposed air modeling protocol for the air assessment (air modeling and/or AERA) and submits it to the MPCA via e-services at: <https://rsp.pca.state.mn.us/>.
- MPCA receives, reviews, and approves the air modeling protocol (when it is complete).
- Project proposer conducts the air assessment and submits the results to the ERU with its initial EAW data submittal. A copy must also be sent to the MPCA's Risk Evaluation and Air Modeling Unit. ERU reviews the project proposer's EAW data submittal and begins preparation of the EAW.

Please contact Charles Peterson of the ERU at 651-757-2856 if you have any questions regarding this process.

How to evaluate a project’s potential air quality impacts for an EAW

The EAW air assessment process takes into consideration both the project’s potential direct impact to air quality as well as its potential cumulative impact. Direct impacts means the air quality impact of the project alone. Cumulative impacts include the project’s direct air quality impacts as well as a representative ambient air quality background conditions (i.e., applicable air quality design value for the project area) and nearby sources air impacts. Minn. R. 4410.1200 (E) require EAWs to identify cumulative potential effects.

The EAW air assessment is done for two separate sets of air pollutants which are listed in parts 1 and 2 of this document. Part 1 pollutants are contained in Tables 1 and 2 below and are derived from the National Ambient Air Quality Standards (NAAQS) and Minnesota Ambient Air Quality Standards (MAAQS). Part 2 pollutants are air toxic pollutants (see Air Assessment Part 2 below for how to find the list of air toxic pollutants).

Air assessment part 1 – This part describes the recommended steps involved in assessing the project’s impact on air quality from emissions of the NAAQS and MAAQS air pollutants listed in Tables 1 and 2 below. Note: The values in Tables 1 and 2 are accurate as of the date of this document. Be sure to verify the current values by consulting Section 1.0 of the [MPCA Air Dispersion Modeling Practices Manual](#).

Part 1 process steps are numbered to correspond to the part 1 flow chart below.

Table 1. (NAAQS Pollutants)

Pollutant	Averaging Period	Significant Impact Level (SIL) ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)
Carbon Monoxide (CO)	1-hour	2000	40,071.5
	8-hour	500	10,304.1
Particulate Matter ≤ 10 microns (PM ₁₀)	24-hour	5	150
Particulate Matter ≤ 2.5 microns (PM _{2.5})	24-hour	1.2	35
	Annual	0.2	12.0
Nitrogen Dioxide (NO ₂)	1-hour	7.52	188.0
	Annual	1	99.7
Sulfur Dioxide (SO ₂)	1-hour	7.86	196.4
	24-hour	5	366.6
	Annual	1	78.6

Table 2. (MAAQS Pollutants)

Pollutant	Averaging Period	Screening Value (SV) ($\mu\text{g}/\text{m}^3$)	MAAQS ($\mu\text{g}/\text{m}^3$)
Total Suspended Particulate (TSP)	Annual	4	75
	24-hour	13	260
Hydrogen Sulfide (H ₂ S)	30-minutes ¹	10	70.0
	30-minutes ²	10	42.0

¹ 30-minute average not to be exceeded more than two times in a year

² 30-minute average not to be exceeded more than two times in five consecutive days

The following are the steps for completing air assessment part 1:

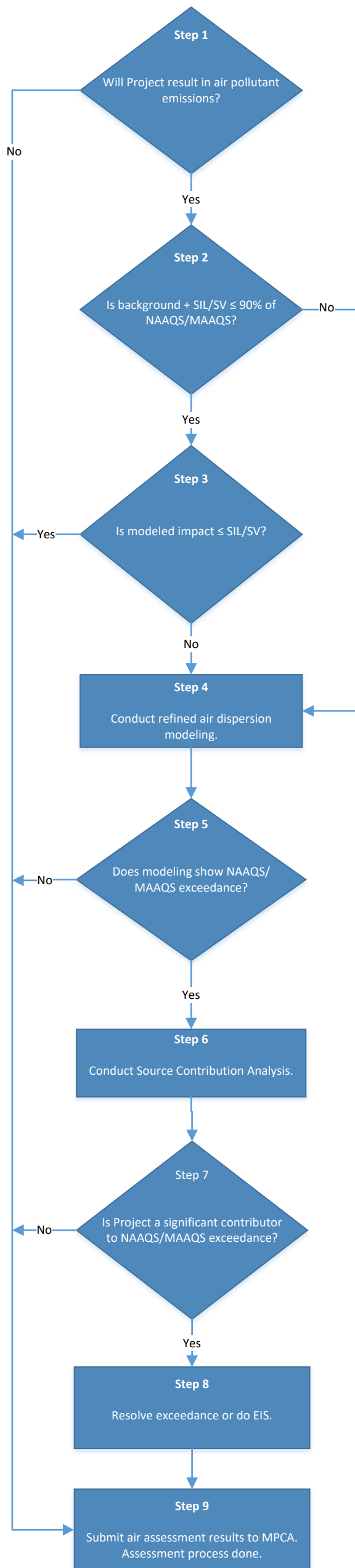
- **Step 1** – Will the project result in the emission of air pollutants?
 - If “yes”, go to step 2.
 - If “no”, go to step 9.
- **Step 2** – Is the representative ambient air quality background concentration (i.e., applicable ambient air quality design value for the project area) plus the pollutant’s significant impact level (SIL) or screening value (SV) less than or equal to 90% of the pollutant’s NAAQS or MAAQS? Be sure to use the SIL, SV, NAAQS, and MAAQS values and units listed in Tables 1 and 2 of this document.
 - If “yes”, go to Step 3.
 - If “no”, go to step 4.
- **Step 3** – Is the project’s screening modeled direct impact (i.e., without ambient background and nearby sources) at the project site less than or equal to the pollutant’s applicable SIL or SV? For the NAAQS pollutants listed in Table 1, the project site means at the project’s fence line or related Ambient Boundary Control Line. For the MAAQS pollutants listed in Table 2, the project site means at the project’s property line.
 - If “yes”, go to step 9.
 - If “no”, go to step 4.

Please refer to [Appendix D of the MPCA Air Dispersion Modeling Practices Manual](#) for more detail on where to place modeling receptors at the project site.

The ERU prefers AERMOD for screening level analysis, but will accept AERSCREEN if demonstrated that its use is appropriate for the project and will give a more conservative analysis than AERMOD. What this means: if the project proposer uses AERMOD, there is no need for justification of its use in the EAW. However, if the project proposer uses AERSCREEN, there must be justification for its use in the EAW. Finally, an air modeling protocol is required if either AERSCREEN or AERMOD is used.

- **Step 4** – Conduct refined air dispersion modeling and then go to step 5.
The ERU requires all refined air dispersion modeling use AERMOD and follow the procedures in the [MPCA Air Dispersion Modeling Practices Manual](#). The modeling must consider the air impact of the project (and any associated facility), nearby sources, and a representative ambient air background concentration.
- **Step 5** – Did the air dispersion modeling show that the pollutant will exceed the applicable NAAQS or MAAQS?
 - If “yes”, go to step 6.
 - If “no”, go to step 9.
- **Step 6** – Conduct a source contribution analysis according to [Appendix A of the MPCA Air Dispersion Modeling Practices Manual](#) and then go to step 7.
- **Step 7** – Did the source contribution analysis show that the project is a “significant contributor” to the modeled exceedance of the applicable NAAQS or MAAQS?
 - If “yes”, go to step 8.
 - If “no”, go to step 9.
- **Step 8** – The project will either need to resolve the modeled exceedance(s) by accepting air emission permit limits and/or air pollution controls, or conduct an EIS. Decide approach to be taken and go to step 9.
- **Step 9** – Part 1 of the air assessment is done. Submit the results to the MPCA’s ERU and complete part 2 of the air assessment below.

The following is a flow chart for completing the air assessment for Part 1. This flow chart corresponds to the steps above and is provided as an alternative description of the steps in Part 1.



Air assessment part 2 – This part describes the recommended steps involved in assessing the project’s impact on air quality from its toxic pollutant emissions. Air toxics are a group of pollutants that cause or may cause cancer or other serious health effects or adverse environmental and ecological effects. Air toxics include, but are not limited to, the Hazardous Air Pollutants ([HAPs](#)) specified in the Clean Air Act Amendments. For a full list of air toxics, see the MPCA Risk Analysis Screening Spreadsheet ([RASS](#)).

- **Step 1** – Will the project result in the emission of air pollutants?
 - If “no”, part 2 of the air assessment is done. Submit results to the MPCA’s ERU with the result from part 1.
 - If “yes”, go to step 2.
- **Step 2** - Complete an Air Emissions Risk Analysis (AERA) according to the process and guidance on the [MPCA’s AERA webpage](#) and submit results to the MPCA’s ERU with the result from part 1. Additionally, a Risk Assessment Screening Spreadsheet (RASS) is completed as one of the initial steps of an AERA to provide a “quantitative analysis” for the AERA. The RASS uses dispersion factors which can be either conservative default values, or from refined air dispersion modeling. Thus, refined air dispersion modeling is not necessarily required to complete a RASS. In addition to the RASS, an AERA also includes “qualitative analysis” which is done by filling out the required forms found on the MPCA’s webpage, specifically on the AERA forms and tools page: <https://www.pca.state.mn.us/air/aera-forms-and-tools>.