

### III.C.10 Motor Vehicle Emissions Budget

The requirements for transportation and general conformity are found in 18 AAC 50.700 through 50.735 of State regulation; and specifically for transportation conformity in Volume II - Section III.I, and for general conformity in Volume II - Section III.J in the State Air Quality Control Plan (SIP). Table III.C.10-1 shows the carbon monoxide motor vehicle emissions budget for the Fairbanks nonattainment area applicable to conformity determinations. It is based on the emission inventories and attainment projections found in the Volume III, section III.C.3 appendix of the SIP. This motor vehicle emissions budget applies for each of the years listed. The value presented for 2006 and later years is based upon guidance from EPA that 90% is the confidence level target for maintenance plans. That value was computed by taking the difference between the 90% inventory target of 32.60 tons per day and the emissions for point, area and nonroad sources (i.e., non on-road sources). The resulting value is the budget for on-road mobile source emissions that provide 90% confidence attainment will be maintained. The values presented for the years prior to 2006 reflect the emission levels projected for the on-road mobile source category at lower confidence levels. Section C.6 provides a justification for accepting these confidence levels in the prior years.

<b>Calendar Year</b>	<b>CO Emissions (tons/day)</b>
2002	29.17
2003	27.83
2004	26.77
2005	26.24
2006	23.23
2007	23.15
2008	23.08
2009	23.01
2010	22.94
2011	22.80
2012	22.66
2013	22.53
2014	22.39
2015	22.25

The motor vehicle emissions budget, when found adequate by EPA, establishes a ceiling for emissions from the on-road sources. The on-road source budget is based on emissions inventories and attainment thresholds calculated using a “hybrid” method that combined measured idle test data with MOBILE6 in AKMOBILE6. The on-road portion of the inventory is used for transportation conformity purposes.

For an emissions budget to be found adequate by EPA, the revisions to the air quality control plan that establishes the budget must:

- be endorsed by the Governor (or a designee);
  - Prior to submittal to EPA, this plan will be filed by the Lieutenant Governor as state regulation.
- be subject to a public hearing;
  - Prior to submittal to EPA, this plan will be the subject of a public hearing in Fairbanks on these plan revisions in 2004. The affidavit of oral hearing will be included in Appendix III.C.10.
- be developed through consultation among federal, State and local agencies;
  - Federal, state, and local agencies will consult on the motor vehicle emissions budget. A summary of the interagency teleconference will be included in Appendix III.C.10. Comments received from other agencies will be incorporated into the plan.
- be supported by documentation that has been provided to EPA ;
  - This plan contains documentation supporting the motor vehicle emission budget. See Section III.C.3. The CO emission inventory is included in Appendix III.C.3.
- address any EPA concerns received during the comment period;
  - Preliminary comments on the motor vehicle emissions budget were received from EPA Region 10 staff via email and phone conversations. Modifications were made to this section of the plan to address those suggestions. Revisions will be prepared to address any additional comments received.
- clearly identify and precisely quantify the revised budget;
  - This section clearly identifies the motor vehicle emissions budget for Fairbanks.
- show that the motor vehicle emissions budget, when considered together with all other emissions sources, is consistent with the requirements for reasonable further progress and attainment;
  - The motor vehicle emissions budget is established based on the Fairbanks CO emission inventory for the nonattainment area. The budget when considered with all

other emission sources is consistent with the requirements for reasonable further progress and attainment. In particular, see Sections III.C.3, III.C.5, III.C.6, and III.C.7.

- demonstrate that the budget is consistent with and clearly related to the emissions inventory and the control measures in the plan revision;
  - The motor vehicle emissions budget is established based on the Fairbanks CO emission inventory and control measures included in the plan. In particular, see Sections III.C.3, III.C.5, III.C.6, and III.C.7.
- explain and document revisions to the previous budget and control measures, and include any impacts on point or area sources; and
  - The budget presented in this plan is an update of the 14.40 ton per day budget established in the previous version of this plan. A discussion of revisions to the control measures and impacts on point and area sources is included in section III.C.5
- address all public comment on the plan’s revisions and include a compilation of these comments.
  - Comments on the plan revision will be received at public hearing and responses will be prepared to comments received. They will be listed in a response to comments document included in Appendix III.C.10. In addition, the Fairbanks North Star Borough Assembly will pass a resolution that approves the plan revisions. This resolution will be included in Appendix III.C.10.

Once a motor vehicle emissions budget is found to be adequate by EPA, the Fairbanks Transportation Plan and Transportation Improvement Program (TIP) must be less than or equal to the motor vehicle emissions budget. For projects not from a conforming TIP, the additional emissions from the project together with the TIP emission must be less than or equal to the budget. Prior to a budget’s approval or when a budget is found to be inadequate, the TIP and projects must show emissions reductions (as specified under 40 C.F.R. 93.119).

As a result of the hybrid method used for calculation of Fairbanks mobile source emissions, it is necessary to clearly set out a means for agencies to compute emissions for use in TIP and project conformity determinations.

On-road mobile source emission inventories are typically computed using emission factors generated by EPA’s latest vehicle factor model, MOBILE6. Unfortunately, MOBILE6 is limited in its ability to represent wintertime CO emission factors in cold-weather communities. That model, however, fails to adequately treat two very common wintertime practices in Fairbanks that significantly affect vehicle CO emissions:

1. extended initial idling of vehicles to warm them up prior to travel; and

2. use of “plug-in” heaters to keep the engine warm while parked for long periods to aid in cold start driveability.

To address these limitations, on-road mobile source emissions were computed using a hybrid methodology in a shell program, AKMOBILE6, that combines actual measurements of warm-up idling and plug-in benefits with emission factors from MOBILE6.

To address the subsequent use of this hybrid approach within the conformity process, the following steps are being incorporated into the conformity procedures for Fairbanks plans and projects. The additional steps set out in this section are to be used in conjunction with the applicable requirements for conformity found in 18 AAC 50.700-18 AAC 50.735 and Volume II - Sections III.I and III.J of this SIP.

*Regional Conformity* - For regional emissions analyses (e.g., Plan/TIP updates and regionally significant projects), computation of mobile source emissions will use a method that follows the hybrid method used in developing the emission budget. Under a regional conformity determination, mobile source emissions of a regionally significant project or a transportation improvement program must be compared to the applicable emissions budget established in the SIP. Thus, the emission calculations of a project or plan must be consistent with the methodology used to establish the motor vehicle emissions budget.

*Project-Level Conformity* – Under project-level analysis, conformity determinations cannot be made by comparing localized project emissions to a regional emissions budget. Instead, project-level conformity analysis consists of performing hot-spot dispersion modeling to determine whether a project will cause or contribute to any new violations of ambient standards or increase the frequency or severity of existing violations. This hot-spot modeling requirement applies to nonattainment and maintenance areas for each pollutant. Thus in Fairbanks, hot-spot CO modeling must be performed in project-level conformity determinations. Inputs to the hot-spot modeling include link-specific vehicle emission factors for roadway segments in the project vicinity. For project-level analyses, these emission factors will be developed in one of two ways, depending on the type of project. Through the interagency consultation process, a project will be put into one of two tracks:

1. Those projects that are **not** significantly impacted by changes in off-network emissions (e.g., initial idling and engine block heater use) will follow a more routine approach to computing emission impacts using MOBILE6 and CAL3QHC. Off-network emissions will not be directly modeled in the analyses of these projects, as they do not change as a result of the project. For these types of projects, off-network emissions are accounted for in the background input to the hot-spot modeling.
2. Those projects that **are** significantly impacted by changes in off-network emissions (e.g., initial idling and engine block heater use) will follow a process that incorporates both the off-network emissions and the on-road “traveling” emissions. This will require a hybrid approach similar to that used in developing the emission budget and adapted to represent roadway link-specific emission factors in the local vicinity of the project.

The interagency consultation process will be the key means of ensuring that projects are placed in the correct track for calculation of emission impacts. The interagency consultation process will also be important in ensuring that appropriate analyses of project emission impacts are conducted under the two scenarios listed above. As always, conformity determinations will be subject to the applicable public review requirements required under regulation. This provides the public an opportunity to comment on the approach that is taken for the conformity determination for each plan, program and project.

*General Conformity* – For projects requiring general conformity determinations, it is also important to consider the impacts of off-network motor vehicle emissions (e.g., idle emissions) in developing conformity determinations. Interagency consultation shall be used to determine whether off-network mobile source emissions are significant and what analysis of these emissions is appropriate for determining general conformity.

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