

Appendix G

Air Quality

1.0 Introduction

The federal Clean Air Act (CAA) defines nonattainment areas as geographic regions that have been designated as not meeting one or more of the National Ambient Air Quality Standards (NAAQS). The CAA requires that a State Implementation Plan (SIP) be prepared for each nonattainment area, and a maintenance plan be prepared for each former nonattainment area that subsequently demonstrated compliance with the standards. A SIP is a state's plan for how it will meet the NAAQS by the deadlines established by the CAA.

The US Environmental Protection Agency's (USEPA) Conformity Rule requires SIP conformity determinations on transportation plans, programs, and projects before they are approved or adopted. Conformity is defined as conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. The Conformity Rule also establishes the process by which federal agencies determine conformance of proposed projects that are federally funded or require federal approval, such as the proposed Illinois High Speed Rail (HSR) Project. This determination must demonstrate that the Proposed Action would not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions towards attainment.

The USEPA promulgated regulations to address the conformity requirements of the Clean Air Act. On November 24, 1993, the USEPA promulgated final transportation conformity regulations at 40 C.F.R. Part 93 Subpart A to address transportation plans, programs, and projects developed, funded or approved under title 23 U.S.C. or the Federal Transit Act, 49 U.S.C 1601 et seq. These regulations have been revised several times since they were first issued.

2.0 General Conformity Requirements

On November 30, 1993 (revised March 24, 2010), the USEPA promulgated final general conformity regulations at 40 C.F.R. Part 93 Subpart B for all federal activities except those covered under transportation conformity. Since the project requires approval by the Federal Rail Administration (FRA), but will not be funded or require approval under title 23 U.S.C. or the Federal Transit Act, 49 U.S.C 1601 et seq. general conformity requirements are applicable. General conformity regulations apply to a federal action in a nonattainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutants caused by the federal action equal or exceed certain *de minimis* rates, thus requiring the federal agency to make a determination of general conformity.

The general conformity regulations incorporate a stepwise process, beginning with an applicability analysis. According to USEPA guidance, before any approval is given for a federal action to go forward, the regulating federal agency must apply the applicability requirements found at 40 C.F.R. § 93.153(b) to the federal action and/or determine the regional significance of the federal action to evaluate whether, on a pollutant-by-pollutant basis, a determination of general conformity is required. If the regulating federal agency determines that the general conformity regulations do not apply to the federal action, no further analysis or documentation is required. If the general conformity regulations do apply to the federal action, the regulating federal agency must next conduct a conformity evaluation in accord with the criteria and procedures in the implementing regulations; publish a draft determination of general conformity for public review; and then publish the final determination of general conformity.

3.0 Proposed Project

The affected rail section is within the Chicago-St. Louis corridor. Ten 5-car passenger trains current run

each day. The trains, under the No Build conditions, are powered by one P-42 GE locomotive; under the Build condition, the trains will have to be powered by two P-42 locomotives to reach a speed of up to 110 miles per hour. Increased emissions associated with this project are primarily the result of the need for an additional locomotive to power each train.

4.0 Regulatory Procedures

General conformity regulations establish certain procedural requirements that must be followed when preparing a general conformity evaluation. The first step in a general conformity evaluation is an analysis of whether the requirements apply to a federal action proposed to be taken in a nonattainment or a maintenance area. Unless exempted by the regulations or otherwise presumed to conform, a federal action requires a general conformity determination for each pollutant where the total of direct and indirect emissions caused by the federal action would equal or exceed an applicable annual *de minimis* emission rate.

4.1 Attainment Status of Project Area

The Transportation Center project study area is located in Madison County. Madison County is currently in attainment with the National and Illinois Ambient Air Quality Standards for carbon monoxide and PM₁₀. Madison County is in nonattainment for 8-hour ozone and for the 1997 annual PM₂₅ standard, but in attainment for the 2006 24-hour PM₂₅ standard. Therefore, the lead federal agency may have to demonstrate project-level compliance with the general conformity rule following requirements for each of these pollutants and their precursors.

4.2 *De minimis* Emission Rates

The general conformity requirements will apply for each pollutant for which the total of direct and indirect emissions caused by the Federal Action equal or exceed the general conformity *de minimis* emission rates. The applicable threshold levels for general conformity for the project area, according to 40 CFR Part 93, are shown in Table 1.

**TABLE 1
GENERAL CONFORMITY APPLICABILITY RATES**

Pollutant	Applicability Threshold
Volatile Organic Compounds (VOCs)	100 tons per year
Nitrogen Oxides (NO _x)	100 tons per year
PM _{2.5} (Direct Emissions)	100 tons per year

It should be noted that, because O₃ is a secondary pollutant (i.e., it is not emitted directly into the atmosphere but is formed in the atmosphere from the photochemical reactions of VOC and NO_x in the presence of sunlight), its *de minimis* emission rate is based on primary emissions of its precursor pollutants - VOC and NO_x. If the net increase in emissions of either VOC or NO_x exceeds the *de minimis* emission rate for O₃ (USEPA 1994), the Federal Action is subject to a general conformity evaluation for O₃.

4.3 Applicability for Federal Action

The applicability of the general conformity requirements to the Federal Action was evaluated by comparing the total of direct and indirect emissions for the calendar year of greatest emissions to the *de*

de minimis emission rates specified in Table 1. Where the total of direct and indirect emissions attributable to the Federal Action were found to be below the *de minimis* emission rates for a pollutant, that pollutant is excluded from general conformity requirements and no further analysis is required. Those pollutants that could not be excluded from applicability must undergo a general conformity evaluation.

4.4 Methodology

Locomotive emissions were estimated using EPA’s Emission Factors for Locomotives (EPA-420-F-09-025, April 2009). It was assumed that existing locomotives, which are subject to EPA’s TIER 2 emission limits, would be used for both No Build and Build conditions. No construction-phase emissions are associated with the Proposed Action.

5.0 Estimated Emissions and Comparison to *De minimis* Thresholds

Total annual estimated emissions generated along the corridor with and without the Proposed Action are provided in Table 2. The estimated increases in emissions of each pollutant are less than the general conformity applicability threshold values.

TABLE 2
TOTAL ANNUAL EMISSION INCREASES ASSOCIATED WITH THE PROPOSAL

Pollutant	Emissions (Tons/Year)			Conformity Applicability Thresholds (tons/year)
	With Proposed Action	Without Proposed Action	Projected Increases	
NO _x	167.4	167.0	2.5	100
PM _{2.5}	5.905	5.889	0.13	100

6.0 Findings and Conclusions

As part of the environmental review of the Proposed Project, the FRA conducted a general conformity evaluation pursuant to 40 C.F.R. Part 93 Subpart B. The general conformity regulations may apply because the project area is located in an area that is designated as a moderate nonattainment area for the 8-hour ozone standard and a nonattainment area for PM_{2.5}. The FRA conducted a general conformity evaluation following regulatory criteria and procedures, and concluded that the Proposed Project would not be subject to the general conformity rule. Therefore, the Proposed Project, as designed, conforms to the purpose of the approved State Implementation Plan and is consistent with all applicable requirements.