CHAPTER 1. AIR QUALITY

1. INTRODUCTION AND DEFINITIONS.

a. General. This chapter discusses requirements to conduct air quality analyses for airport development projects under the NEPA and Clean Air Act. Generally, detailed analysis is needed for a project that, due to its size, scope, or location has the potential to affect the attainment and maintenance of established air quality standards. Those standards are known as "National Ambient Air Quality Standards" and are present for six criteria pollutants. Although the requirements under NEPA and the Clean Air Act differ in certain respects, generally the same analysis fulfills requirements under both. NEPA is more rigorous in that it may require detailed analysis where it is not needed under the Clean Air Act's (CAA) general conformity provisions.

b. National Ambient Air Quality Standards. Pursuant to the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six "criteria" air pollutants: carbon monoxide (CO); lead (Pb);[1] nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM) for both PM_{10} and $PM_{2.5}$, and sulfur dioxide (SO_2). Compliance with the NAAQS means the ambient outdoor levels of these air pollutants are safe for human health, the public welfare, and the environment. States are responsible for designating areas that are attainment, nonattainment, or maintenance for each of the criteria pollutants. States are required to develop EPA-approved plans, called State Implementation Plans (SIPs), to achieve or maintain the NAAQS within timeframes set under the Clean Air Act.

c. Attainment area. An attainment area is a geographical area where the levels of all criteria air pollutants meet the NAAQS.

(1) General conformity regulations do *not* apply to a Federal action located in an area that is designated attainment for all six criteria pollutants.

(2) depending upon the size of the airport and the nature of the project, it may still be necessary to conduct an air quality analysis for NEPA purposes. The NEPA analysis is needed to determine whether project emissions would potentially cause significant air quality effects (e.g. cause levels of pollution that would exceed the NAAQS).

d. Nonattainment area. A nonattainment area is a geographic area where the concentration of one or more of the criteria air pollutants is higher than the NAAQS. It is not uncommon for an area to have acceptable levels of five criteria pollutants but an unacceptable level for another. For example, the Washington, D.C.,

[1] Evaluation of criteria air pollutants extends to their regulated precursors: volatile organic compounds (VOCs) and nitrogen oxides (NOx) for ozone and SO_2, NOx, VOCs, and ammonia (ammonia is a precursor only when the state and/or EPA determines a need to analyze ammonia) for $PM_{2.5}$.

metropolitan area is simultaneously designated attainment for CO but nonattainment for 8-hour ozone.

(1) General conformity regulations *do* apply to a Federal action located in an area that is designated nonattainment for any of the six criteria pollutants.

(2) depending upon the size of the airport and the nature of the project, it is normally necessary to conduct an air quality analysis for NEPA purposes. The NEPA analysis is needed to determine whether project emissions would potentially cause significant air quality effects (e.g. cause levels of pollution that would exceed the NAAQS).

e. Maintenance area. This is an area previously designated "nonattainment" but re-designated as a "maintenance area"[under the CAA, States, not EPA designate area and EPA "promulgates" these designations 42 USC 7407(d)] because air pollution levels have improved above levels that would place the area in nonattainment status. An area may remain in maintenance status for up to 20 years before the re-designates the area as attainment.

(1) General conformity regulations *do* apply to a Federal action located in an area that is designated maintenance for any of the six criteria pollutants.

(2) Depending upon the size of the airport and the nature of the project, it is normally necessary to conduct an air quality analysis for NEPA purposes. The NEPA analysis is needed to determine whether project emissions would potentially cause significant air quality effects (e.g. cause levels of pollution that would exceed the NAAQS).

f. Direct emissions. Direct emissions are emissions caused by the Federal action that occur at the same time and place as the Federal action. They include emissions from temporary construction activities as well as emissions caused by operation of airport facilities and aircraft. Construction emissions may represent a high proportion of the total emissions a project causes and may trigger general conformity requirements in areas designated as severe nonattainment or maintenance areas for pollutants such as O_3 and serious nonattainment for PM_{10}. To report a proposed action's "total direct emissions" (see section 1.k. of this chapter), assess construction emissions separately as a category and in combination with other categories of operational emissions (e.g., aircraft, ground support equipment, on-airport access traffic) the proposed action would cause.

g. Indirect emissions. Indirect emissions are emissions caused by a proposed Federal action that occur later in time and/or at a distance from the proposed action. For General Conformity purposes (40 CFR Part 93, Subpart B) under the Clean Air Act (42 USC Sections 7409, 7410, 7502-7514 and 7571-7574), FAA must assess project-related emissions that are:

(1) reasonably foreseeable at the time of the General Conformity evaluation; and

(2) that FAA can practicably control through a continuing program responsibility.

(See *Air Quality Procedures for Civilian Airports and Air Force Bases*,[2] pg. 14, Section 2.1.5). Indirect emissions are added to direct emissions to determine the total direct and indirect emissions for the project.

h. Total direct and indirect emissions. This is the total level of emissions due to combining total direct emissions with total indirect emissions.

i. General Conformity. General Conformity refers to the requirements under Section 176(c) of the Clean Air Act (CAA) for federal agencies (other than FHWA and FTA) to show that their actions conform to the purpose of the applicable SIP. [3] Section 176(c) of the CAA states:

> "No department, agency, or instrumentality of the Federal government must engage in, support in any way or provide financial aid for, license or permit, or approve, any activity which does not conform to an approved State Implementation Plan (SIP)."

As a result, Federal agencies cannot fund or approve activities that do not conform to the SIP established for a nonattainment or maintenance area. Therefore, a Federal action in nonattainment or maintenance area must not:

(1) cause or contribute to NAAQS new violations;

(2) increase the frequency or severity of any existing NAAQS; or

(3) delay the timely attainment of a NAAQS, interim emissions decreases, or other milestones.

Note: EPA adopted regulations to implement this requirement at 40 CFR Parts 6, 51, Subpart W, and 93, Subpart B. Title 40 CFR Part 93, Subpart B is commonly known as the General Conformity Rule.

j. State Implementation Plan (SIP). This is a state's detailed description of the regulations, programs, and measures to be used in that state to reduce air pollution and fulfill its responsibilities under the Clean Air Act, as amended (CAA) to attain the NAAQS for all criteria pollutants within the legally required timeframes. The CAA requires each State to prepare and submit a SIP to EPA for approval. EPA's review process for SIPs includes opportunities for public comment.

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[2] http://www.faa.gov/regulations_policies/policy_guidance/envir_policy/airquality_handbook/media/Handbook.pdf

[3] Section 176(c) of the CAA requires that EPA adopt regulations to ensure that projects sponsored by Federal agencies do not interfere with a State's ability to meet or maintain the NAAQS. To fulfill the CAA requirements, EPA promulgated the Transportation Conformity Regulations on November 24, 1993, and the General Conformity Regulations on November 30, 1993. The Transportation Conformity Regulations address transportation plans, programs, and projects funded under Title 23 USC or the Transit Act. The General Conformity Regulations are applicable to all other Federal projects and actions, including FAA actions for airport development.

k. Total net emissions. For purposes of general conformity, total direct and indirect emissions due to a proposed action's construction and operation in the future must be compared with the total direct and indirect emissions associated with the future no action/no build alternative to calculate the total net emissions of each criteria air pollutant and its precursors that a proposed action will cause. The total net emissions are then compared to the *de minimis* thresholds to determine whether a general conformity analysis and determination are needed.

Example: Total net emissions for CO in 2012 = (Future (2012) No Action CO emissions - Future (2012) CO emissions with the proposed airport action).

l. Regionally significant actions. If a proposed airport action's total direct and indirect emissions exceed 10 percent of a nonattainment or maintenance area's total emissions inventory for a particular criteria pollutant, it is a "regionally significant action." In such cases, FAA must prepare a General Conformity Determination even though the project's total net emissions are below *de minimis*. EPA designed the regional significance provision to address locating a large new project in a rural area having good air quality. Although no FAA project to date has qualified as regionally significant, project documentation for actions presumed to conform must include analysis to address this requirement.

2. APPLICABLE STATUTES AND IMPLEMENTING REGULATIONS.

APPLICABLE STATUTES AND IMPLEMENTING REGULATIONS	SUMMARY DESCRIPTION	OVERSIGHT AGENCY
The National Environmental Policy Act, [42 USC Sections 4321-4347].	The Act establishes a national environmental policy and the Council on Environmental Quality (CEQ) to oversee the Act's implementation. The national policy encourages citizens to maintain productive and enjoyable relations between activities and the environment; to promote efforts preventing or removing damage to the environment and biosphere; to stimulate the health and welfare of man; and to enrich our understanding of the Nation's ecological systems and natural resources. Under NEPA FAA may have to prepare detailed air quality analysis for proposed projects and reasonable alternatives whose air quality emissions have the potential to cause violations of the National Ambient Air Quality Standards for the six criteria pollutants. The screening techniques and methodologies applicable to air quality assessments for airport projects are discussed in Chapter 2 of *Air Quality Procedures For Civilian Airports & Air Force Bases*, April 1997 (footnote 2 for web site.)	Council on Environmental Quality (CEQ)

APPLICABLE STATUTES AND IMPLEMENTING REGULATIONS	SUMMARY DESCRIPTION	OVERSIGHT AGENCY
Clean Air Act (CAA), as amended [42 USC) Sections 7409, 7410, and 7502-7514	The Act requires establishing National Ambient Air Quality Standards (NAAQS) and designating attainment or nonattainment areas based on those NAAQS within a state. It also requires preparation of State Implementation Plans (SIPs) for EPA approval. In addition, the Act requires compliance with General and Transportation Conformity rules.	U.S. Environmental Protection Agency (EPA)
Section 176 (c) of the Clean Air Act, 42 USC 7571-7574; Determining Conformity of General Federal Actions to State or Federal Implementation Plans [40 CFR Part 93, Subpart B].	Procedures and criteria for determining if a proposed Federal action conforms to State (or Federal) air quality implementation plans. FAA is only required to demonstrate general conformity for the proposed airport action/preferred alternative.	EPA
Federal Presumed to Conform Actions Under General Conformity, 72 Federal Register 41565, dated July 30, 2007.[4]	List of FAA actions presumed to conform under 40 CFR Section 93.153(f)	FAA

b. Analytical guidance sources. We provide the following guidance sources to help FAA staff better understand how to plan, conduct, and use various air quality analyses and procedures.

GUIDANCE SOURCE	SUMMARY DESCRIPTION	ISSUING AGENCY
General Conformity Guidance: Questions and Answers, July 13, 1994 (with limited revisions of May 5, 2006)	This document provides 50 questions and answers to clarify how the General Conformity Rule should be applied.	EPA
General Conformity Guidance for Airports: Questions and Answers, September 25, 2002	This document provides answers to 39 questions to clarify the application of the General Conformity Rule to Federal actions involving airport development.	EPA and FAA

[4]http://a257.g.akamaitech.net/7/257/2422/01jan20071800/edocket.access.gpo.gov/2007/pdf/07-3695.pdf

GUIDANCE SOURCE	SUMMARY DESCRIPTION	ISSUING AGENCY
Air Quality Procedures for Civilian Airports and Air Force Bases (and Addendum of September 2004)	Commonly called the *FAA Air Quality Handbook*, this report provides technical information and recommended FAA guidelines and practices for conducting aviation-related air quality analyses in compliance with NEPA and the Clean Air Act. Figure 1 shows analysis thresholds for airport activity and whether a proposed airport action has the potential to cause air quality effects at various levels.	FAA/US Air Force

3. APPLICABILITY TO AIRPORT DEVELOPMENT ACTIONS.

a. General. At airports, air pollutants and precursors of most concern include CO, NO_x, $PM_{10,}$ $PM_{2.5}$, HC, and sometimes, SO_x.[5] Since Federal actions to support airport development projects could increase levels or concentrations of the above pollutants, air quality impacts are often issues of concern in airport environmental documents.

(1) NEPA. Many airport actions are too small to require detailed air quality analysis. Whether an air quality assessment is required depends upon the nature of the project, the size of the airport and project, and the project area's air quality classification. See, section 6 of this chapter for more details about the screening criteria used to determine if an airport development project needs an air quality analysis. As noted in Figure 1 of the FAA/USAF *Air Quality Handbook*, such an assessment may be required under NEPA even in areas designated attainment for the pollutant(s) of concern. The protocol for air quality analysis for major airport development projects should be developed in close coordination with US EPA and State and local air quality agencies.

(2) CAA General Conformity. An airport action is subject to General Conformity requirements *only* if it would occur in a nonattainment or maintenance area. The first step is to determine if the proposed project is within a nonattainment or maintenance area. Next, FAA determines whether the proposed project is exempt or on the Presumed to Conform List. (See below). If the proposed project is not exempt or presumed to conform, FAA undertakes an "applicability analysis" for the proposed airport action. The analysis uses an "emissions inventory" of a *proposed airport action's* or a *preferred alternative's* future direct and indirect emissions and those of the future no action/no build alternative. FAA uses the analysis to determine if the net emissions caused by a proposed airport action or preferred alternative in a nonattainment or maintenance area exceed the applicable *de*

[5] Pollutant lead (Pb) is not normally a concern for airport projects, unless the chief source of Pb at the airport is the combustion of leaded aviation fuel used in piston-engine aircraft. See *Air Quality Procedures for Civilian Airports and Air Force Bases*, dated April 1997, pg. 11.

minimis thresholds. If so, then FAA must follow the procedures to demonstrate conformity and issue a "Conformity Determination" for that action. The following sections summarize how to determine whether General Conformity requirements apply to a proposed airport development action.

(a) Exempted actions. EPA identified the following Federal actions (Included here if they relate to airport actions) as exempt under the General Conformity Rule. EPA also provided illustrative examples of exempt actions in the preamble to the General Conformity Rule, noting that the exemptions were too numerous to list in the Rule. The actions are not subject to General Conformity requirements under 40 CFR Sections 93.153(c), (d), (e), and (f) because EPA determined that they have minimal (i.e., *de minimis*) emission levels. The actions are:

(1) Actions covered by the Transportation Conformity regulations (40 CFR Section 93.153(a));

(2) Actions having net total direct and indirect emissions below the *de minimis* levels specified for each criteria pollutant (40 CFR Section 93.153(c)(1));

(3) Air traffic control activities and adopting approach, departure, and enroute procedures for air operations. 58 FR 63214, 63229.

(4) Routine installation and operation of aviation navigational aids. 58 FR 63214, 63229.

(5) Actions included on an agency "presumed to conform" list (40 CFR Section 93.153(f));

(6) Actions specifically listed in the rule as exempt, including:

(a) routine maintenance and repair activities (40 CFR Section 93.153(c)(2));

(b) transfers of ownership of interests, land facilities, and real property (40 CFR Section 93.153(c)(2)(xiv));

(c) emissions from remedial or removal actions authorized under the Comprehensive Environmental Resource Compensation and Liability Act (CERCLA) (40 CFR Section 93.153(d)(5));

(d) actions responding to natural disasters or emergencies (40 CFR Section 93.153(d)(2));

(e) demonstrations improving air quality research or having no harmful environmental effects (40 CFR Section 93.153(d)(3); or:

(f) administrative, planning, enforcement, and inspection activities (40 CFR Sections 93.153(c)(6), 93.153(c)(xii), and inspection under 93.153(c)(v), respectively.

(b) Presumed to Conform actions. For General Conformity purposes, EPA regulations allow Federal agencies to develop a list of actions whose emissions are typically below the *de minimis* thresholds for the various criteria pollutants. These actions are known as "presumed to conform actions." This provision provides Federal agencies with another way to reduce unnecessary paperwork for actions that cause hardly any emissions. FAA has published a list of actions presumed to conform. See *Federal Presumed to Conform Actions Under General Conformity,* 72 *Federal Register* 41565, July 30, 2007. Federal agencies must demonstrate that presumed to conform actions are not regionally significant. See paragraph 1 (l) above.

b. Airport actions typically requiring an air quality assessment under NEPA or general conformity applicability analysis. For NEPA purposes, most major airport development projects (e.g., new airport, new runway, major runway extension) will require an air quality assessment if pollutant levels are likely to exceed the NAAQS. To help determine if it is necessary to examine NAAQS in these situations, discuss the issue with State or regional air quality staff (e.g., during scoping and other consultation). Sections 6.b((1) and (2) of this chapter discuss screening criteria that are helpful in determining if an assessment is needed.

c. Advisory determinations and planning activities not requiring an air quality or General Conformity analysis. The following actions would not alter air quality or they are advisory in nature (e.g., an airspace determination) and do not require an air quality analysis under NEPA or the CAA.

(1) FAA determinations in response to proposals submitted on Form 7460 (*Notices of Proposed Construction or Alteration* in an airport vicinity or Form 7480 (*Notices of Landing Area Proposal*)

(2) FAA approvals of noise compatibility programs under 14 CFR Part 150;[6]

(3) conditional approvals of airport layout plans.[7]

4. PERMITS, CERTIFICATIONS, AND APPROVALS. Airport projects, particularly those that involve stationary air pollutant sources, may be subject to permitting, certification, or approval under other provisions of the Clean Air Act or state or local law.

[6] Airport sponsors may not implement measures in an approved NCP until FAA complies with applicable environmental requirements.

[7] A conditional approval does not authorize an airport sponsor to build the project.

Note: Emissions from projects that require a NSR or PSD are not included in the calculation of total direct and indirect emissions under general conformity 93.153(d)(1).

a. New Source Review (NSR). Generally managed by State air quality agencies, the NSR program (Title I of the CAA at Parts C and D) is a means to control air emissions from new or modified stationary sources (e.g., boiler plant, electrical generating facility). New and modified stationary sources at airports such as airport power plants and painting and maintenance facilities are sometimes subject to requirements NSR Programs and Permitting. The NSR Program requires pre-construction reviews of air quality emissions and using air pollution control technology or other emission reduction strategies. The NSR Program is comprised of three permitting programs:

(1) minor sources located in attainment, unclassified, or designated nonattainment areas (minor source NSR);

(2) major stationary sources located in designated nonattainment areas (nonattainment NSR); and

(3) major sources located in attainment or unclassified areas (Prevention of Significant Deterioration or PSD).

In nonattainment areas, the NSR Permit Program applies only to construction projects that will cause potential emissions exceeding certain thresholds. For new sources the potential emissions must exceed the pollutant levels that make it a "major" source. "Major" source thresholds vary by pollutant and by the degree of nonattainment for the area in which the source is located (i.e., based on the sources potential to emit from 100 tons per year down to 10 tons per year). For modifications to existing major sources (a physical change to an airport or a change in its operations), the modification must cause a "significant" net increase in emissions to trigger the NSR requirements. Under this Program, the owner or operator of a new or modified major stationary source must install control technology that can provide the lowest, achievable emission rate and offset emission increases that are above baseline emission levels.

b. Prevention of Significant Deterioration (PSD). The PSD Program applies to new or modified major stationary sources located in areas meeting the NAAQS for at least one criteria pollutant. Maintenance areas are included in the Program. The PSD Program also applies to new or modified major sources of non-criteria pollutants regulated under the CAA, but it doesn't apply to hazardous air pollutants listed and regulated under Section 112 of the CAA. Under the PSD Program, a source is considered major if it is:

(1) in one of the 28 named source categories;

(2) emits or has the potential to emit 100 tons of a criteria pollutant yearly; or

(3) not in the named categories or has the potential to emit 250 tons per year of a PSD-regulated pollutant.

c. Indirect Source Review (ISR). An ISR is a process used to study and reduce emissions from new or modified facilities or structures serving mobile sources and emitting a primary pollutant listed earlier (see section 1.a of this chapter). These facilities include airport parking lots or garages or commercial or industrial developments. Nine states have ISR regulations (see FAA's *Air Quality Procedures for Civilian Airports & Air Force Bases*, Appendix J). When needed, the responsible FAA official must ensure airport environmental reviews include ISRs for the states and facilities noted in that Appendix. Consult AEE and APP-400 for methods and models addressing non-aviation air emission sources.

5. ENVIRONMENTAL COMPLIANCE PROCEDURES - ENVIRONMENTAL ANALYSIS.

a. Consultation with Federal, State, and local air quality and planning agencies. The U.S. EPA and State and local Air Quality and planning agencies have various duties and responsibilities in overseeing regional air quality, developing and managing SIPs, and enforcing the NAAQS. Regional, county, and municipal air quality agencies regulate and manage many activities in their respective areas. Metropolitan planning organizations (MPOs) and county and municipal planning and environmental agencies often work with these agencies to develop and revise the SIP. MPOs are a source of current population data for purposes of air quality analysis. These parties also work to develop construction and operational SIP budgets for aviation and surface transportation actions or other activities affecting local or regional air quality.

b. Early coordination with agencies is critical. FAA and the airport sponsor should coordinate a proposed air quality analysis with Federal, State and local agencies early in the environmental review process. That coordination helps to:

(1) identify the types of issues, required permits, and available information relevant to the project;

(2) obtain accurate air quality information and data on conditions in the project area that may address:

(a) air monitoring and meteorological data;

(b) the current and projected attainment, nonattainment, or maintenance status of the project study area.

(c) information on any non-Federal permitting requirements; or

(d) SIP-related information such as emissions budgets, prescribed emission reduction measures, and attainment time frames; and

(3) resolve air quality issues throughout the environmental review process.

c. Public participation. FAA must afford appropriate opportunities for public participation under NEPA. In addition, if a General Conformity Determination is required, FAA must issue a notice in the local media stating that a draft General Conformity Determination is available for review and comments. Later, FAA must notify the public when it issues its final General Conformity Determination.

6.. DETERMINING IMPACTS.

a. General. an airport action's air quality assessment predicts and examines additional emissions that airport construction and/or operation would cause. The assessment examines increased emissions from airport-related vehicular traffic, new facility construction, and/or expansion of an airport's power plant. FAA and the airport sponsor use the results of the assessment to determine the *net* air quality impacts[8] due to the proposed airport action and, when appropriate for NEPA, its reasonable alternatives. FAA's *Air Quality Handbook*, Appendix B, provides a useful project review checklist.

b. Applicability analysis and exempt and presumed to conform actions. FAA must determine if a proposed FAA action supporting airport development projects in designated nonattainment or maintenance areas will achieve the purpose of the applicable SIP.[9] To achieve that purpose, the action must meet and maintain the NAAQS.

(1) The first step in the analysis is to determine if the proposed action is located within a nonattainment or maintenance area. Next, determine whether the proposed action is specifically exempt or an action that FAA has determined is presumed to conform. If it is, no further air quality analysis is needed; except to demonstrate that an action presumed to conform is not regionally significant (see section 1.l. of this chapter).[10]

Note: FAA is the only agency to date to establish a presumed to conform list. *Federal Presumed to Conform Actions Under General Conformity,* 72 *Federal. Register* 41565, dated July 30, 2007.

(2) If the action is not exempt or presumed to conform, conduct an applicability analysis. That analysis allows FAA to determine if an action's total net emissions equal or exceed the established screening criteria emission rates known

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[8] Total Net emissions = (Future No Action emissions - Future proposed airport action emissions)

[9] The same requirements apply to a Federal Implementation Plan (FIP), which may be developed in the event that the State is unable to complete an approved SIP.

[10] 40 CFR Section 93.153(b).

as the *de minimis* thresholds. If the action's net emissions exceed the *de minimis* thresholds, a General Conformity Determination must be conducted.

c. General Conformity analysis and Determination. The General Conformity Rule is designed to prevent Federal agencies from taking actions that increase emissions that would violate the SIP. The conformity regulations provide detailed guidance concerning how conformity may be demonstrated for the various criteria pollutants. The Rule also identifies methods available to demonstrate conformity for the various criteria pollutants.

(1) when the total net direct and indirect emissions of an action located in an area designated nonattainment or maintenance exceed *de minimis* levels for one or more criteria pollutants, FAA must make a General Conformity Determination that may include more detailed air quality analysis;

(2) FAA uses that analysis to demonstrate how the action will conform with the purpose of the SIP (or FIP, if one exists) as part of a General Conformity Determination; and

(3) when a General Conformity Determination is needed, FAA must make that determination *before* the approving FAA official makes a decision on an action.

d. When to conduct an air quality analysis for NEPA purposes. For purposes of the NEPA analysis, the guidelines presented in Figure 1 of the FAA *Air Quality Handbook* are an important reference. Figure 1 shows analysis thresholds for airport activity.

(1) Actions at general aviation airports. If the proposed airport action would occur at an airport having a total of 180,000 general aviation and air taxi annual operations, an air quality analysis is required.

(2) Actions at commercial service airports. If the proposed airport action would occur at an airport having more than 1.3 million enplanements (2.6 million passengers) or more than 180,000 general aviation and air taxi annual operations, an air quality analysis is required.

(3) Actions serving a combination of operations and passengers. The *Air Quality Handbook* also includes a formula that combines operations and enplanements (see sections 6.d(1) and (2) of this chapter, respectively) to determine if an air quality analysis is needed.

(4) Actions that increase traffic coming to the airport and increase congestion at off-airport highway intersections. Section 2.1.5 and Figure 3, "Air Quality Analysis Guidelines and Thresholds," in the *Air Quality Handbook* address a special analysis for roadway intersections. The Section indicates that special intersection analysis and dispersion modeling for CO emission should be considered if the Level of Service (LOS) at the affected intersections is D, E, or F. Actions at these LOSs may cause carbon monoxide (CO) emissions that exceed the NAAQS.

e. Model for determining air quality impacts for CAA and NEPA purposes. The Emissions Dispersion Modeling System (EDMS) is the model FAA r*equires* for all airport-related air quality analyses. Sections 6.e.(1)-(3) of this chapter provide important information on the version of the model to use. Section 6.e(4) and (5) provide information on the two major elements of an air quality.

(1) Data and model version. The data and model version used should be the latest and most currently available when begining preparation of the air quality analysis for a proposed action;

(2) When FAA issues a new model version. if FAA issues a new version of EDMS after a project's air quality analysis has begun, the updated version may be used to provide additional disclosure concerning air quality, but use of the new model is not required.

(3) Major revision or addition to the analysis. Use of the new model should be considered carefully when there is a major revision or addition to the analysis (e.g. if baseline and/or forecast years are updated, thereby creating the potential for different impacts. [11]

(4) Emissions Dispersion Modeling System (EDMS). FAA *requires* the use of this model for assessing aviation-related air quality impacts except hazardous air pollutants.[12] The EDMS contains emission factors for aircraft engines, ground service equipment (GSE), motor vehicles, and other sources of emissions common to airports. To comply with FAA requirements, analysts *must* use the most current version of the model when preparing airport emission inventories and performing a dispersion analysis.

(5) Emissions inventory. Typically reported in *tons per year* or *kilograms per day*, an emissions inventory provides a gross sum of total emissions for the future no action and proposed action alternatives (or reasonable alternatives if needed). An inventory may include emissions of all criteria air pollutants, except for ozone (O_3). This is because ozone is a "secondary" pollutant (i.e., it forms in the atmosphere, usually on hot summer days and has two major precursors (volatile organic compound (VOCs) and nitrous oxide (NO_x)). Levels of those compounds are used to estimate ozone levels. Analysts use the inventory results to compare the alternative's total emissions to future no action emissions (see Question 20 of the *General Conformity Guidance for Airports, Questions and Answers*, dated Sept. 25, 2002).

(a) Actions requiring an emissions inventory. If a proposed airport action in a nonattainment or maintenance area is not exempt from CAA requirements nor presumed to conform (see sections 3.a.(2)(a) and (b) of this chapter), the responsible FAA official must ensure that FAA's environmental process includes an

[11] 63 Federal Register 18068, dated April 13, 1998.
[12] The current EDMS version (Version 5.0) is not capable of predicting hazardous air pollutants, but future versions are expected to provide that capability.

emissions inventory to assess potential effects for general conformity purposes. This inventory will allow FAA to conduct an applicability analysis to determine if the total net emissions a proposed airport action or preferred alternative would cause are above or below the applicable *de minimis* levels, (expressed annually, in "tons per year (tpy))."

(b) When the emissions inventory shows total net emissions are below *de minimis* levels. If total net emissions of the proposed airport action or alternative analyzed are below *de minimis thresholds*, and is determined not regionally significant, no further air quality analysis is needed. Therefore, the responsible FAA official may conclude the following:

(1) For NEPA purposes, The action and/or alternatives (if alternatives are evaluated) will not cause a significant air quality impact, since it is unlikely the pollutant concentration analyzed would exceed a NAAQS (See FAA *Air Quality Handbook*, pg. 14, Section 2.1.5)); and/or

(2) For General Conformity purposes. FAA need not conduct additional analysis or make a General Conformity Determination.

(c) When the emissions inventory shows total net emissions are above *de minimis* levels. The General Conformity Rule is designed to prevent Federal agencies from taking actions that increase emissions that would violate the SIP. The Rule also identifies methods available to demonstrate conformity for the various criteria pollutants. Consistent with the guidelines in the *Air Quality Handbook*, responsible FAA officials may use the analysis prepared for general conformity purposes to fulfill NEPA requirements. Doing so enables the officials to take a hard look at and disclose potential air quality impacts and identify alternative mitigation measures. If the total net emissions due to the proposed airport action exceed the *de minimis* thresholds or SIP emission budgets, FAA may demonstrate conformity by, among other things, conducting a dispersion analysis to determine if the action or alternative would violate any NAAQS.

(1) For CAA purposes. If the *proposed airport action* would occur in a nonattainment or maintenance area and its total net emissions exceed the applicable *de minimis* threshold(s) or SIP emission budgets, FAA may, among other things, conduct a dispersion analysis for general conformity purposes.

(2) For NEPA purposes. A dispersion analysis will also disclose whether the action has the potential to violate the NAAQS and cause a significant air quality impact under NEPA. Note that this analysis may be required depending upon the airport and the nature of the project, even if general conformity does not apply. See, the *Air Quality Handbook* and sections 6.d(1) and (2) of this chapter. The air quality impacts analysis under NEPA is broader than that required under general conformity, as it may include reasonable alternatives and cumulative impacts from actions FAA and other entities have or will undertake.

(3) Dispersion analysis. A dispersion analysis uses the emission inventory results combined with meteorological and other real world conditions to simulate the proposed airport action's pollutant concentration(s) over time and space. The results, expressed as *parts per million or milligrams/cubic meter,* are useful to identify potential air quality "hot-spots" and areas where NAAQS violations are likely to occur. A dispersion analysis is most commonly done for CO, but it is also suitable for other "local pollutants," including PM_{10}, NO_x, SO_2, and VOCs. Since the NAAQS are expressed as concentration levels, a dispersion analysis provides a direct means to determine if project-related emissions in the future have the potential to violate the NAAQS.

d. Integration of General Conformity and NEPA compliance. The release of NEPA and general conformity applicability analyses and documents should be synchronized to the fullest extent possible. 40 CFR Section 1500.2(c) states:

> "Federal agencies shall to the fullest extent possible:...(c) Integrate the requirements of NEPA with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively."

Although not required, the synchronized release of the draft General Conformity Determination and draft NEPA document helps make the environmental review process more efficient, facilitates public review and comment, and minimizes the risk of public confusion. Where a draft General Conformity Determination is not needed, the draft NEPA document should summarize and disclose the inventory and applicability analysis.

(1) Draft documentation. Under the General Conformity Rule, if requested, FAA must make its draft General Conformity Determination available for public review. FAA must place a prominent advertisement in a daily newspaper having general circulation and serving the project area. The advertisement must tell the public of the draft Conformity Determination's availability. It must also state FAA is providing the public 30 days to review the draft Determination and submit written comments on it. FAA must respond to all comments received on the draft Determination. If requested, FAA must make these comments publicly available within 30 days of the date FAA issues its final General Conformity Determination.

(2) Final documentation. FAA must make its final General Conformity Determination available to the public. Therefore, FAA should try to complete this Determination so that it can make it publicly available when FAA issues its Final EIS. FAA must publish a notice advertising the Final Determination's availability to the public in a daily newspaper of general circulation serving the project area. FAA must ensure the advertisement appears within 30 days of the date it issues its final General Conformity Determination. FAA must issue this final Determination *before* it approves the project (i.e., before issuing a ROD or other document signaling Federal approval for the airport sponsor to proceed with project construction).

e. Airport-related hazardous air pollutants (HAPs). EPA has identified roughly 25 individual HAPs that are associated with emissions from aircraft and airport

ground service equipment (GSE). However, EPA does not specify aircraft and airports in the definitions and categories of HAP sources in Section 112 of the CAA ("Hazardous Air Pollutants").[13] Nor has EPA established standards for HAPs. When compared with existing urban backgrounds, air quality monitoring studies near several large airports have not shown that increased HAP levels occur near those facilities. In fact, only a small percentage of an urban area's overall air pollution is attributable to airport emissions.[14] Nevertheless, due to the emission levels of unburned hydrocarbons and particulates near airports, EPA's National Air Toxic Program notes that airports are complex facilities that emit HAPs. Therefore, to comply with NEPA's disclosure requirements, FAA reports HAPs emissions in its environmental documents for information purposes only. FAA does not use that information to assess human health risks. The responsible FAA official should consider whether 40 CFR Section 1502.22, which addresses incomplete and unavailable information, applies to HAPS emissions for major airport development projects.

(1) For major projects normally requiring an EIS (e.g., new airport, new runway, major runway extension), the responsible FAA official should decide, in consultation with Federal, State, and local air quality agencies whether it is appropriate to conduct a HAPs emission inventory. This is, especially so when the action would occur in areas that are classified as nonattainment or maintenance for O_3 or particulate matter (PM).

(2) As needed, consult APP-400 to determine the HAPs FAA will analyze and the methodology FAA will use to conduct that analysis.

7. DETERMINING IMPACT SIGNIFICANCE.

a. General. The responsible FAA official should consider the following factors in consultation with agencies having jurisdiction or special expertise about air quality in the airport-affected area. FAA's *Air Quality Handbook*, Appendix B, provides a project Review checklist to help guide air quality analysts.

[13] Section 213 of the CAA "Aircraft Emission Standards" addresses aircraft emissions.

[14] GAO (2003) estimates about 0.5 percent, 2003.

ORDER 1050.1E THRESHOLD	FACTORS TO CONSIDER
When a project or action exceeds one or more of the National Ambient Air Quality Standards (NAAQS).	The responsible FAA must determine if the air quality impacts of a proposed airport action (or if needed, its reasonable alternatives) would exceed a NAAQS for the timeframes used for the NEPA analysis. FAA's Air Quality Handbook (pg. 14) states: "In the action is in a nonattainment or maintenance area [and for this Desk Reference, an attainment area] it is assumed that a NAAQS assessment [i.e., emissions dispersion analysis] is not required for an airport or air base action, since it is unlikely the action's pollutant concentrations would exceed the NAAQS."

Adapted from: Table 7-1, FAA Order 5050.4B.

b. Mitigation. During the environmental review process, agencies having jurisdiction or special use expertise about air quality normally provide letters addressing air quality effects. Often, those letters include recommended measures to mitigate those effects under NEPA beyond those required to comply with applicable substantive requirements under the Clean Air Act. An appendix to the environmental document should include copies of those letters. The environmental document should summarize the key information in those letters and cross-reference the appendix for further information. If FAA or the airport sponsor does not adopt any recommended mitigation, the environmental document should clearly explain why the recommendation was not adopted. If feasible, provide an estimated schedule for undertaking required mitigation measures.

c. Reporting air quality findings. The environmental document should contain enough information, materials, and evidence to fulfill applicable NEPA, state or local regulations, and/or CAA requirements. FAA's *Air Quality Handbook*, Appendix B, provides a "Project Reviewer's Checklist" to help guide the developers and reviewers of an air quality analysis. If the proposed airport action requires or involves air quality mitigation measures as a condition of FAA approval or to mitigate the project's potential air quality impacts below the threshold of significance, the environmental assessment and Finding of No Significant Impact (FONSI) must identify those measures. Air quality environmental documentation should include:

(1) Evidence of agency coordination. The environmental document must contain evidence that interagency consultation with the proper air quality agencies has occurred.

(2) NEPA impact determination. Where detailed air quality analysis was conducted, the environmental document must contain a conclusion about potential

project-related impacts on air quality based on the results of an emissions inventory or a dispersion analysis, whichever is appropriate. If the emissions inventory indicates the proposed airport action or, if appropriate, a reasonable alternative's total net emissions are below *de minimis* levels, and there are no other unusual circumstances, the responsible FAA official may assume the proposed airport action or alternative would not cause a significant air quality effect (see FAA's *Air Quality Handbook*, section 2.1.5, pg. 14).

(3) General Conformity Determination. When issuing a draft or final General Conformity Determination, FAA must notify the appropriate EPA Region, State and local air quality agencies, the Metropolitan Planning Organization (MPO), the public, and, when applicable, Federal land management agencies. The environmental document for the proposed airport action should report the status of the Determination and include it as an appendix. The appendix should also include letters from the above agencies. The Determination will state the proposed airport action or the preferred alternative would not:

(a) cause or contribute to new violations of a NAAQS;

(b) increase the frequency or severity of an existing NAAQS violation; or

(c) delay the timely attainment of a NAAQS or any required interim emission decreases or milestones.

(4) Achieving General Conformity. Ways to achieve compliance with the General Conformity Rule include:

(a) documenting that planned emission increases are included in the existing SIP;

(b) persuading the State to include the emission increases in the SIP; or

(c) offsetting or mitigating emission increases from the project, provided the offsets are for the *entire* action, not just an incremental amount to attain levels below *de minimis* standards.

8. ENVIRONMENTAL IMPACT STATEMENT CONTENT.

a. General. After completing the applicable air quality analyses, use the following information, criteria, and guidelines as appropriate to determine the degree of the alternative's air quality impacts. For major airport development projects, it may also be appropriate to prepare a HAPs emission inventory and disclose the results in the EIS.

(1) If a dispersion analysis shows a criteria pollutant will exceed a NAAQS, a significant impact may occur.

(2) FAA must prepare an EIS if the responsible FAA official has information signaling significant air quality effects may occur and mitigation would not reduce impacts below the NAAQS. Further consultation with representatives from State or regional air quality officials, the MPO, and/or regional EPA air quality offices during EIS scoping will likely be needed. The responsible FAA official may wish to consider inviting some of those agencies to participate as cooperating agencies in preparing the EIS due to their expertise on air quality issues (e.g., analyses, alternatives to consider, or mitigation). As fitting, the EIS must contain information required under other parts of this chapter and the following:

(a) the results of interagency consultation completed to more precisely define unresolved issues and the necessary steps, analyses, or actions required to address them;

(b) the results of emission inventories or dispersion analysis;

(c) a description of necessary air quality mitigation measures;

(d) mitigation benefits or emission decreases;

(e) time frames for adopting the mitigation, and

(f) sponsor or State agency commitments to carry out the mitigation.

b. Mitigation. The EIS should describe any mitigation measures agencies with air quality expertise recommend. The EIS, Record of Decision (ROD) and/or General Conformity Determination must identify the air quality mitigation measures FAA requires as part of its project approval or to lessen the project's potential air quality impacts in accordance with the CAA. Mitigation measures required to fulfill General Conformity Rule requirements generally should also fulfill requirements applicable to major airport development projects. That assures all reasonable steps have been taken to minimize significant adverse air quality impacts under 49 USC Section 47106(c)(1)(B). FAA must analyze mitigation measures that Federal, State, and local air quality agencies recommend beyond those required under the CAA to assure FAA has fairly evaluated the potential environmental consequences to fulfill NEPA requirements.

The EIS and ROD should summarize the measures, emission reduction benefits, and the process for administering, monitoring, and enforcing the proposed mitigation. If feasible the EIS and/or ROD should include a schedule that lists clear timelines for implementing the mitigation.